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ABSTRACT

Developed as part of the Marine Corps Institute (MCI) correspondence training program, this course on vegetables, soups, sauces, gravies, and beverages is designed to increase Marine Corps cooks' effectiveness as food handlers, using the proper techniques in the preparation of these items. Introductory materials include specific information for MCI students and a study guide (guidelines to complete the course). The nine-hour course consists of three chapters or lessons. Each unit contains a text and a lesson sheet that details the study assignment and sets forth the lesson objective. A written assignment is also provided. (YLB)

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ARLINGTON, VA. 22222

33.19

1. ORIGIN

MCI course 33.19, Vegetables, Soups, Sauces, Gravies, and Beverages, has been prepared by the Marine Corps Institute.

2. APPLICABILITY

This course is for instructional purposes only.

J. M. D. HOLLADAY
Lieutenant Colonel, U. S. Marine Corps
Deputy Director

MCI-R241

INFORMATION

FOR

MCI STUDENTS

Welcome to the Marine Corps Institute training program. Your interest in self-improvement and increased professional competence is noteworthy.

Information is provided below to assist you in completing the course. Please read this guidance before proceeding with your studies.

1. MATERIALS

Check your course materials. You should have all the materials listed in the "Course Introduction." In addition you should have enough envelopes to mail all lessons back to MCI unless your lesson answer sheets are of the self-mailing type. If your answer sheets are of the preprinted type, check to see that your name, rank, and social security number are correct. Check closely, your MCI records are kept on a computer and any discrepancy in the above information may cause your subsequent activity to go unrecorded. You may correct the information directly on the answer sheet. If you find a discrepancy and correct it, ensure that you correct this information on all your answer sheets. If you did not receive all your materials, use the enclosed Student Request/Inquiry (MCI-R14__) to notify MCI of this fact and what you require. (Note: The MCI-R14__ may be mailed to MCI without envelope or stamp).

2. LESSON SUBMISSION

Submit your lessons on the answer sheets provided. Complete all blocks and follow directions on the answer sheet for mailing. In courses in which the work is submitted on blank paper or printed forms, identify each sheet in the following manner:

DOE, John J. Sgt 332-11-9999
44.1, Procedures of Legal Administration
Lesson 3
Military or office address
(RUC number, if available)

Otherwise, your answer sheet may be delayed or lost. If you have to interrupt your studies for any reason, contact your training NCO who will request a single six month extension of time, which is added to the original Course Completion Deadline (CCD) date. If you are not attached to a Marine Corps unit you may make this request by submitting the enclosed MCI-R14__, or

by calling the Registrar Division on AUTOVON 288-4175/2299/6293 or commercial (202) 433-5174/2299/2691. You are allowed one year from the date of enrollment to complete this course. Your commanding officer is notified of your status through the monthly Unit Activity Report. In the event of difficulty, contact your training NCO or MCI immediately.

3. ENROLLMENT/MAIL TIME DELAY

Presented below are the Enrollment/Mail Time delays. Column I represents the First Class mail time from MCI to the designated geographical location or from your location to MCI. All correspondence is sent via First Class mail. Course materials are sent via Special Fourth Class Book Rate.) You should add five working days for our processing. Example: Eastern U.S. - 3 days mailing time to MCI + 5 working days MCI processing + 3 days mailing time back to the unit = 11 days. Column II represents Regular Mail from the time when the enrollment application is mailed until the unit receives the course. Example: Eastern U.S. - Enrollment application 3 days mailing time to MCI + 5 working days MCI processing + 6 days mailing time to the unit = 14 days.

GEOGRAPHIC AREA	COLUMN 1	COLUMN 2
EASTERN U.S.	3	14
WESTERN U.S.	4	19
FPO NEW YORK	5	21
DEPT. OF STATE MARINE SECURITY GUARD	7	24
HAWAII (NON-FPO)	5	12
FPO SAN FRANCISCO	7	27
FPO SEATTLE	6	23

Note: These times represent the service standard. The actual times may vary. If the delay you are experiencing is excessive, please contact the MCI Registrar by phone, message, or letter, so that we may take action.

4. GRADING SYSTEM

LESSONS			EXAMS	
GRADE	PERCENT	MEANING	GRADE	PERCENT
A	94-100	----- EXCELLENT	----- A	94-100
B	86-93	----- ABOVE AVERAGE	----- B	86-93
C	78-85	----- AVERAGE	----- C	78-85
D	70-77	----- BELOW AVERAGE	----- D	65-77
NL	BELOW 70	----- FAILING	----- F	BELOW 65

You will receive a percentage grade for your lessons and for the final examination, along with a reference sheet (MCI R69), indicating the questions incorrectly answered. All lessons must be COMPLETED AND PASSED before you will be administered an exam. The grade attained on the final exam is your course grade.

5. FINAL EXAMINATION

ACTIVE DUTY PERSONNEL: When you submit your LAST LESSON, your exam will be mailed automatically to your commanding officer. The administration of MCI final examinations must be supervised by a commissioned or warrant officer, or a staff NCO (equivalent or higher), and it must be validated by the administrator.

INACTIVE DUTY OR CIVILIAN EMPLOYEE: The exam may be supervised by a director of civilian personnel, civilian training officer, clergyman, or local school official

6. COMPLETION CERTIFICATE

The completion certificate will be mailed to your commanding officer. For non-Marines, it is mailed to your supervisor or directly to you, as appropriate.

7. RESERVE RETIREMENT CREDITS

Reserve retirement credits are awarded to inactive duty personnel only. Credits awarded for each course are listed in the "Course Introduction" and are only awarded upon successful completion of the course. Reserve retirement credits are not awarded for MCI study performed during drill periods if credits are also awarded for drill attendance.

8. DISENROLLMENT

Only your commanding officer can request your disenrollment from an MCI course since this action will adversely affect the unit's completion rate.

9. ASSISTANCE

Consult your training NCO in the event of course content problems. If he is unable to assist you, MCI is ready to help you whenever you need it. Please use the enclosed Student Course Content Assistance Request (T&E-1) or call the Autovon telephone number listed below for the appropriate course writer section.

PERSONNEL/ADMINISTRATION/LOGISTICS/CORRECTIONS	288-3259
COMMUNICATIONS/ELECTRONICS/AVIATION/NBC	288-3604
INFANTRY	288-3611
ENGINEER/MOTOR TRANSPORT/UTILITIES	288-2275
SUPPLY/FOOD SERVICES/FISCAL	288-2285
TANKS/ARTILLERY/SMALL ARMS REPAIR/AAV	288-2290
For administrative problems call the MCI Hotline:	288-4175

For commercial phone lines, use area code 202 and prefix 433 instead of 288.

STUDY GUIDE

10. STUDY HINTS

By enrolling in this course, you have shown a desire to improve the skills you need for effective job performance, and MCI has provided materials to help you achieve your goal. Now all you need is to develop your own method for using these materials to best advantage.

The following guidelines present a four-part approach to completing your MCI course successfully:

- Make a "reconnaissance" of your materials;
- Plan your study time and choose a good study environment;
- Study thoroughly and systematically;
- Prepare for the final exam.

a. MAKE A "RECONNAISSANCE" OF YOUR MATERIALS

Begin with a look at the course introduction page. Read the COURSE INTRODUCTION to get the "big picture" of the course. Then read the MATERIALS section near the bottom of the page to find out which text(s) and study aids you should have received with the course. If any of the listed materials are missing, see paragraph 1 of this pamphlet to find out how to get them. If you have everything that is listed, you are ready to 'reconnoiter' your MCI course.

Read through the table(s) of contents of your text(s). Note the various subjects covered in the course and the order in which they are taught. Leaf through the text(s) and look at the illustrations. Read a few lesson questions to get an idea of the types that are asked. If MCI provides other study aids, such as a slide rule or a plotting board, familiarize yourself with them. Now, get down to specifics!

b. PLAN YOUR STUDY TIME AND CHOOSE A GOOD STUDY ENVIRONMENT

From looking over the course materials, you should have some idea of how much study you will need to complete this course. But "some idea" is not enough. You need to work up a personal study plan; the following steps should give you some help.

① Get a calendar and mark those days of the week when you have time free for study. Two study periods per week, each lasting 1 to 3 hours, are suggested for completing the minimum two lessons required each month by MCI. Of course, work and other schedules are not the same for everyone. The important thing is that you schedule a regular time for study on the same days of each week.

② Read the course introduction page again. The section marked ORDER OF STUDIES tells you the number of lessons in the course and the approximate number of study hours you will need to complete each lesson. Plug these study hours into your schedule. For example, if you set aside two 2-hour study periods each week and the ORDER OF STUDIES estimates 2 study hours for your first lesson, you could easily schedule and complete the first lesson in one study period. On your calendar you would mark "Lesson 1" on the appropriate day. Suppose that the second lesson of your course requires 3 study hours. In that case, you would divide the lesson in half and work on each half during a separate study period. You would mark your calendar accordingly. Indicate on your calendar exactly when you plan to work on each lesson for the entire course. Do not forget to schedule one or two study periods to prepare for the final exam.

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③ Stick to your schedule.

Besides planning your study time, you should also choose a study environment that is right for you. Most people need a quiet place for study, like a library or a reading lounge; other people study better where there is background music; still others prefer to study out-of-doors. You must choose your study environment carefully so that it fits your individual needs.

c. STUDY THOROUGHLY AND SYSTEMATICALLY

Armed with a workable schedule and situated in a good study environment, you are now ready to attack your course, lesson by lesson. You will find your first study assignment and your first written assignment on page 1 of lesson 1. On this page you will also find the lesson objective, a statement of what you should be able to do after completing the assignments.

DO NOT begin by reading the lesson questions and flipping through the text for answers. If you do so, you will prepare to fail, not pass, the final exam. Instead, proceed as follows:

① Read the study assignments carefully. Make notes on the ideas you feel are important and mark any portion you have difficulty understanding.

② Reread the portions you marked in step ① . When you have mastered the study assignment, start to work on the written assignment.

③ Read each question in the written assignment carefully.

④ Answer all questions that you are sure of and leave the others blank.

⑤ Reread the portions of the study assignment that explain the items you left blank.

⑥ Complete the written assignment and send it to MCI for grading.

⑦ Go on to the next lesson.

Follow the same procedure for each lesson of the course. If you have problems with the text or lesson questions that you cannot solve on your own, ask your section OIC or NCOIC for help. If he cannot aid you, request assistance from MCI on the MCI Student Course Content Assistance Request included in this pamphlet.

When you have passed the final lesson, the final exam will be sent to your training officer or NCO.

d. PREPARE FOR THE FINAL EXAM

How do you prepare for the final exam? Follow these three steps:

① Review each lesson objective as a summary of what was taught in the course.

② Reread all portions of the text that you found particularly difficult.

③ Review all the lesson questions, paying special attention to those you missed the first time around.

If you follow these simple steps, you should do well on the final. GOOD LUCK!

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UNITED STATES MARINE CORPS
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VEGETABLES, SOUPS, SAUCES, GRAVIES, AND BEVERAGES

Course Introduction

VEGETABLES, SOUPS, SAUCES, GRAVIES, AND BEVERAGES is primarily designed to increase your effectiveness as a food handler, using the proper techniques in the preparation of vegetables, soups, sauces, gravies, and beverages. The course emphasizes the importance of proper cooking procedures to retain the characteristic color, form, and nutrients of food items used in Marine Corps dining facilities.

ORDER OF STUDIES

Lesson Number	Study Hours	Reserve Retirement Credits	Subject Matter
1	2	0	Vegetables
2	3	1	Soups, Sauces, Gravies, and their Seasonings
3	2	1	Beverages
	2	1	FINAL EXAMINATION
	9	3	

EXAMINATION: Supervised final examination, without textbooks or notes; time limit, 2 hours.

MATERIALS: MCI 33.19, Vegetables, Soups, Sauces, Gravies, and Beverages.

Lesson sheets and answer sheets.

RETURN OF MATERIALS: Students who successfully complete this course are permitted to keep the course materials.

Students disenrolled for inactivity or at the request of their commanding officer will return all course material.

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* * *

PREFACE

The course, Vegetables, Soups, Sauces, Gravies, and Beverages has been designed to provide Marine Corps Cooks, MOS 3371, private through sergeant, with a source of study material on the portion of food preparation dealing with the characteristics, classification, preparation, and serving of vegetables, soups, sauces, gravies, and beverages in Marine Corps dining facilities. The contribution and importance of these items to a meal are stressed.

SOURCE MATERIALS

MCO P10110.16B — Armed Forces Recipe Service, Sep 1973 (w/change 3)
NAVSUP Publication 421 — Food Service Operations, Jan 1971 (w/change 1)
NAVPERS 10274 — Commissary Man 3 and 2, Rate Training Manual, Training Pubs Div. NavPer. Prog. SupAct, Washington, D. C., 1971

Food Service Course Student Workbook, Camp Lejeune, N. C.
Applied Cooking, Part 1, U. S. Army Quartermaster School, Fort Lee, Va.

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Chapter 1

VEGETABLES

1-1. INTRODUCTION

For a long time vegetables were thought to contribute little except variety to the human diet. They were used sparingly and little effort was devoted to their preparation, cooking, and serving. Today, improvements in vegetable production, preservation, shipping, and marketing as well as increased knowledge of their nutritional value has lead to wider use of vegetables. To retain their best appearance, flavor, and nutritional value, it is necessary to understand and practice the proper methods of preparing, cooking, and serving. This chapter will discuss the classes of vegetables; their value in the menu; the market forms available; their receipt, storage, and processing; vegetable cooking methods; and vegetable serving standards.

1-2. CLASSES AND VALUE OF VEGETABLES

a. Classes. Vegetables come from a wide group of plants and are recognized and classified by their place of origin on the plant. For study purposes vegetables will be placed into six classes according to their growth on the plant. These classes are made up of the leaves, seeds, roots, flowers, stems, and fruit vegetables.

(1) Leaves. Leafy vegetables are those vegetables whose leaves are the food product of the plant. The majority of the leafy plants used as vegetables have broad cuplike leaves grown on short stems. Examples of leafy vegetables are lettuce, cabbage, and spinach with broad leaves and brussel sprouts, escarole, and parsley with small leaves.

(2) Seeds. Beans, peas, and corn are listed in this class. Both beans and peas grow in pods. When ripe or ready for processing, the pods are stripped and the inner bean or pea is used for food except for green beans or wax beans wherein the entire vegetable is used. Corn is one of the most important vegetables produced. The only portion of the corn plant that is edible is the corn kernel; the remainder of the plant is used for animal fodder.

(3) Roots. In this class there are types of vegetables which characteristically grow under the ground. These vegetables are beets, carrots, parsnips, the vast varieties of potatoes (white and sweet), and several kinds of onions and garlic.

(4) Flowers. Of the flower vegetables, you are familiar with only two in the dining facility. They are the cauliflower head and broccoli spears.

(5) Stems. Few edible vegetables come from stems of plants. Celery and asparagus are the two main vegetables in this class.

(6) Fruit. Several vegetables are derived from the fruit of plants. These include tomatoes, cucumbers, eggplants, and squash.

b. Vegetable value in the menu. Vegetables are high in nutritive value and are an important part of a daily balanced diet. In this portion of the lesson the value of vegetables in the menu will be discussed.

(1) Nutritive value. Vegetables are an important source of energy, and as a group they are also a valuable source of vitamins and minerals. A majority of the vegetables served in dining facilities are rich in vitamin A, the B-complex vitamins, and vitamin C. Also many of the green vegetables are a good source of iron and calcium. Vegetables contain various amounts of cellulose in a form that cannot be digested and are prone to hold water during their passage through the body, thus aiding the bodily functions. Chemically, vegetables are known to contain proteins, carbohydrates, fats, minerals, vitamins, and water.

(2) Menu value. Vegetables add color, variety, and form to the meal being served.

(a) Color. Color preservation cannot be stressed too strongly. You must retain as much of the natural color of the vegetable being prepared as possible. To retain color there are a few points to remember. To prevent green vegetables from turning olive green, avoid overcooking. Red vegetables can be prepared with the addition of a diluted acid such as vinegar, lemon juice, or cream of tartar. These acids can prevent the wide color changes that hard water or soda will cause. The pigments of white vegetables will turn yellow when cooked in hard or alkaline water. This yellowish color is not unattractive but it should not be confused with the dark color caused by overcooking or oxidation. Vegetables that are yellow or orange are very stable and are not affected by vegetable acids or heat. All vegetables should be cooked in small batches to prevent discoloration and overcooking. Never use vegetable food coloring to preserve the natural color.

(b) Variety. It has been said that "variety is the spice of life." Therefore, in planning menus it is necessary to have variety. Do not use vegetables repeatedly in the same way as they will become monotonous. For example, there are a great many different ways to serve potatoes, and cabbage may be served raw, creamed, scalloped with cheese, or simmered with carrots. Custom determines the type of meal suitable for any given occasion and the acceptable food combination that may be used. An example of these combinations would be peas and carrots with turkey and sweet potatoes or cabbage, potatoes, carrots, turnips, and onions served as part of a New England boiled dinner.

(c) Form. A meal made up of foods in the same or similar forms is unappetizing. It is necessary to strive for a contrast. Bad form would be a combination of all foods flat in shape or shaped in piles like mounds of mashed potatoes. An example of good form would be stuffed green peppers, potato cakes, braised carrots, and green peas. Here you have the different shapes, sizes, and color variations.

1-3. MARKET FORMS OF VEGETABLES

Vegetables are supplied in many forms. The preserved forms allow for a regular supply of vegetables for the military dining facility. The five forms available are: fresh produce, frozen, dehydrated, dried, and canned.

a. Fresh. Fresh vegetables are picked, given an initial inspection, packed, and shipped under refrigeration. Some of the fresh vegetables received at the dining facility are cabbage, lettuce, endive, green peppers, cucumbers, celery, and squash. When ordering fresh vegetables keep in mind the growing season. The growing seasons will determine the availability and the cost of the item or items ordered. Fresh vegetables spoil very easily so it is important to process and preserve them early so they will be palatable and the nutrients retained.

b. Frozen. Frozen vegetables are those fresh vegetables which can undergo the quick freezing process and not lose a large percentage of their natural color, shape, or nutritive value. Green beans, lima beans, broccoli spears, brussel sprouts, corn (whole grain or on the cob), okra, mixed vegetables, and spinach are some of the frozen vegetables available. Frozen vegetables require storage at 0° F or lower and may be kept free from spoilage for a considerable period of time.

c. Dehydrated. The dehydrated vegetables have been processed in a manner which removes most of the water content and aids in the storage quality of the vegetable. At present some of the dehydrated vegetables available are green peppers, cabbage, onions, green beans, potatoes (diced, sliced, granulated), and sweet potatoes (granulated).

d. Dried. Several of the seed vegetables such as peas and beans are supplied in a naturally dried condition similar to dehydrated vegetables.

e. Canned. Vegetables that are canned have been cooked in the container and need only be heated to serving temperature. They are a convenient item because they save time in preparation and can be stored for a long period of time. Some examples of canned vegetables available to you in the dining facility are asparagus, beets, green beans, carrots, corn, whole white potatoes, vacuum packed sweet potatoes, and whole tomatoes.

1-4. RECEIPT, STORAGE, AND PROCESSING OF VEGETABLES

The proper receipt, storage, and processing of vegetables is of great importance to you, the cook. If vegetables brought into the dining facility are not properly cared for, unusable waste occurs. The following subparagraphs will discuss the receipt, storage, and processing of the market forms of vegetables.

a. Receipt. Upon receipt of vegetables (fresh, frozen, dehydrated, dried, or canned) into the dining facility, first check the condition of the containers.

(1) Fresh. If fresh produce has a crisp firm texture, it will only need minor processing. The removal of unusable leaves or stems and storage in the vegetable refrigerator will suffice. But, should the produce be old, dry, limp, and have traces of spoilage, then you determine what must be done to preserve the remainder of the vegetables. It is recommended that the following steps be taken prior to storage.

(a) Trim-cut old, dry, limp, and wilted leaves, stems, or other parts of the vegetables.

(b) Wash the vegetables with cold running water.

(c) Shake off excess water which might remain after draining.

(d) Store the vegetables under refrigeration (36° to 38° F) to retain freshness of the saved portion.

(e) Use these vegetables first; don't check out more of the same vegetables until you have used the processed vegetables completely.

(2) Frozen. Upon the receipt of frozen produce, it is important that the vegetables are quickly returned to the freezer and kept in a frozen state.

(3) Nonperishables. These include dehydrated, dried, and canned vegetables. The vegetable containers should be checked for damage which may have occurred in shipment. If damaged containers are found, consult MCO P10110.14_, Food Service and Subsistence Management Manual, for proper disposal of unsuitable material. Containers that are in good condition should be placed in the storeroom.

b. Storage. Vegetables must be stored according to their market forms.

(1) Fresh. The ideal storage temperature of fresh produce is 36° to 38° F. Do not order more than one week's supply of a vegetable if possible. Vegetables retained after this period tend to lose their natural color and nutritive value. They are apt to spoil more rapidly, thus resulting in a financial loss to the dining facility.

(2) Frozen. Frozen vegetables must be stored at 0° F or lower and not allowed to thaw without refrigeration. If thawing is necessary prior to cooking the vegetable, it should be done under refrigeration. The package should never be opened to hasten defrosting. Frozen vegetables will thaw under a refrigerated temperature of 35° to 40° F, in approximately 6 to 8 hours.

(3) Nonperishable. These vegetables require no special handling but should be stored in a clean, cool, dry, well-ventilated area with a temperature range of 50° to 70° F. Containers should be dated and placed on shelves or dunnage and kept clean. Although nonperishable goods have good keeping qualities, it is recommended that the stock be rotated when resupplied. A point to remember is "first in, first out."

c. Processing. Prior to using any type of vegetable in the preparation of a product, it must be processed. The processing of fresh, frozen, or nonperishable vegetables varies.

(1) Fresh. These vegetables will often require three steps in processing. They are cleaning, paring/cutting, and freshening.

(a) Cleaning. When we say clean a vegetable, we don't mean to use soap and water. Fresh vegetables should be washed thoroughly with cold water. A brush used solely for the scrubbing of vegetables can be used to clean carrots, potatoes, turnips, or any other vegetable which may have been dug or pulled from the soil. Vegetables such as asparagus, cabbage, and cauliflower may have worms or insects within the leaves or plant blossoms. They can be removed by washing the vegetable in cold water and soaking in cold salted water (1 tbsp of salt per qt of water) for 1/2 to 1 hour. Then rinse and store in a cool storage place until needed for cooking.

(b) Paring and cutting. The type of cutting and paring of vegetables is determined by the vegetable itself and by the Armed Forces Recipe Service instructions for the product being prepared. Potatoes are pared, while summer squash is not. When preparing mashed potatoes, the potatoes are quartered after paring; and when preparing French fries, the potatoes are cut into strips.

(c) Freshening. After cleaning a vegetable, if it is to be eaten raw, it should be freshened or crisped just prior to serving time. No one likes to bite into a soft, limp carrot stick or find wilted lettuce in an otherwise well prepared tossed salad. To achieve freshening, place the vegetables into containers of ice cold water and store in a cool storage room or refrigerator until ready for use. Keep in mind the time of use; don't let the vegetables soak too long or valuable nutrients will be lost.

(2) Frozen. There is very little processing required for frozen vegetables. In most cases all that is required is that the frozen vegetable be added to boiling salted water and cooked as prescribed. In some instances frozen vegetables, such as corn on the cob, spinach, and other leafy greens, require thawing or partial thawing prior to cooking.

(3) Nonperishable. The processing of these market forms (dehydrated, dried, and canned) of vegetables is similar to perishable vegetables with the exception of canned goods.

(a) Dehydrated. Processing of this vegetable is limited to reconstitution of the vegetable by replacing the water which was removed by dehydration. For best results, the instructions given by the manufacturer should be followed for reconstitution. Unless instructions so state, most dehydrated vegetables are cooked by starting in cold water, slowly bringing it to boil, reducing the heat, and simmering until tender. Dehydrated vegetables can be treated the same way as other cooked vegetables once they have been cooked with the exception of carrots and some green peas which have been cooked prior to dehydration.

(b) Dried. Dried beans and peas are other types of vegetables which require the addition of water prior to cooking. Water lost in ripening and drying must be replaced by soaking in water. How fast the type of bean or pea softens depends upon the particular vegetable's rate of water absorption. Beans absorb their own weight in water in 5 to 6 hours. Water ratio should be 4 parts water to 1 part of dried vegetable for soaking. Dried beans or peas should not be refrigerated during the soaking period. Also these vegetables should not be boiled as they are high in protein and proteins will toughen at boiling temperatures. They should be simmered throughout the entire cooking period.

(c) Canned. Canned vegetables need little or no processing as they are already cooked; heating thoroughly is all that is needed. They should be handled as any other cooked vegetable. Canned vegetables may be prepared by heating in the packing liquid, draining, seasoning, and serving. They may also be prepared by draining them, concentrating the liquid, returning the vegetables, heating, seasoning, and serving them with the liquid. The vegetable juices contain the sugar, soluble proteins, minerals, and vitamins and should be fully utilized in soups, sauces, or gravies and not discarded. Follow the Armed Forces Recipe Service directions for the type of preparation selected.

1-5. METHODS OF VEGETABLE COOKERY

The method of cooking a particular vegetable should be selected to preserve the highest food value and the fresh vegetable flavor, color, and texture. Vegetables that are cooked until just tender have a better flavor and appearance and retain more of their food value than

those cooked for longer periods of time. Vegetables are best when cooked in small quantities. Batches should be as small as the time and equipment available will allow. If starting times of batches are staggered, a continuous cooking operation may be maintained up to and including the serving period. Cooking of vegetables should be completed as close to serving time as possible. The methods of vegetable cookery that are available for your use are boiling or simmering, steaming, baking, grilling or sauteing, ovenfrying, French frying, and panfrying.

a. Boiling or simmering. Although we commonly use the term boiled vegetables, we are actually referring to vegetables which have been simmered. The word boil means to heat water to a point of 212° F or 100° C causing violent bubbling or rolling. To simmer, the water is brought to a heated degree just below the boiling point and the bubbles are breaking just below the surface of the water. Although this method of vegetable cookery is a common practice, it is not the best since the risk of nutrient loss is possible. The food value of boiled vegetables can be conserved if the cooking process is done properly. This can be accomplished by the use of a minimum amount of water to prevent the lose of valuable minerals and vitamins into the cooking water. Vegetables should be added to boiling salted water (as directed by AFRS, MCO P10110.1_), and the water brought back to the boiling point, and then turned down to a point where the water will simmer. Cooking vegetables until tender but not overcooked and mushy is important. If the vegetables must be kept for any length of time before serving, they should be allowed to cool and then reheated. Any excess liquid should be retained for use in soups, sauces, or gravies because the liquid contains vitamins and minerals that would otherwise be lost. Several hints on boiling vegetables are:

(1) Green vegetables. Green vegetables, such as spinach, chard, asparagus, brussels sprouts, green cabbage, green beans, peas, and all leafy vegetables should be cooked quickly. Cooking the vegetable uncovered will help to preserve the natural green color. Under no circumstances should baking soda be added to the cooking water in an effort to intensify the color. Soda destroys the nutrients and gives the vegetables an unnatural flavor and texture.

(2) Red vegetables. Red cabbage and beets are cooked uncovered. Beets which are cooked in their skins will retain their color if the taproots and about 2 inches of stem are left intact. The skin is easily removed after cooking. A small amount of vinegar or lemon juice added to beets or red cabbage near the end of the cooking period will improve the flavor as well as the color. Cooking red cabbage with a few tart apples is also recommended.

(3) Yellow vegetables. The yellow vegetables, such as carrots, yellow squash, sweet potatoes, and yellow corn, may be cooked either covered or uncovered. However, if the pot is covered, the cooking time will be decreased and the vitamin content of the vegetables will be conserved. Yellow vegetables are not very susceptible to color change, but overcooking will cause them to become pale.

(4) White vegetables. White vegetables should be cooked as quickly as possible until tender. Overcooking will cause white vegetables to turn a grayish or brownish color. White potatoes may be cooked either covered or uncovered. Onions and turnips are cooked uncovered; cauliflower, covered.

b. Steaming. When referring to steam-cooked vegetables we are talking about those vegetables which are cooked under pressure in a steam cooker. The use of this method of vegetable cookery will help in the retention of valuable nutrients and preserve the original shape. Vegetables commonly cooked using this method are beets, broccoli, cabbage, carrots, cauliflower, celery, corn, onions, parsnips, white potatoes, sweet potatoes, and squash.

c. Baking. Baking is cooking in an oven with dry heat. This method of vegetable cookery is considered to be the most suitable for vegetables. The flavor and nutrients are preserved especially if the vegetables can be cooked in their skins, and as long as you don't overbake or scorch the vegetable. Some vegetables suitable for baking are white potatoes, sweet potatoes, onions, tomatoes, and squash.

d. Grilling or sauteing. Grilling is the method of cooking on a griddle with little or no grease. It is often called frying. Sauteing is merely frying a vegetable quickly in shallow grease. The various styles of cooking potatoes (hash brown, lyonnaise, and home fries) on a griddle

would be examples of grilling. The vegetables are cooked until completely done. When you are sauteing onions or mushrooms, you are merely heating the food product until tender to increase its palatability. Some vegetables commonly used for grilling or sauteing are mushrooms, string beans, corn, onions, carrots, parsnips, squash, shredded cabbage, and potatoes. Often diced bacon is used in place of oil, shortening, or butter. It is lightly grilled before adding the vegetable. The flavor of many products can be enhanced if a light, golden coat or crisp surface is developed.

e. Ovenfrying. Ovenfrying is a cooking method used when cooking large quantities of vegetables. They can be parboiled, placed in a well-greased roasting pan, and cooked in an oven rather than on a grill. Turn the product periodically to ensure even browning. Hash browned, cottage fried potatoes, and several other vegetables cook well by the use of this method.

f. Deep-fat frying. This method of cookery is commonly called "deep-fat frying" or "French frying." The fat used for deep-fat frying is either lard, vegetable fats, or a combination of both. Certain vegetables, such as white potatoes, onions, and eggplant are often deep-fat fried. These vegetables can be fried without parboiling before frying. Other vegetables, such as cauliflower and parsnips, are partially cooked, excess water drained, and then deep-fat fried. Another method which can be used for cooking rissole potatoes is to deep-fat fry the potatoes until brown, then place them in the oven to finish the cooking process. The temperature of the cooking fat is determined by the state of the vegetable, whether it is partially cooked or raw. There is no danger of mineral loss in any type of frying, but vitamins can be destroyed if the cooking temperature is too high or if the cooking time is too long.

1-6. SERVING STANDARDS OF VEGETABLES

The quality of cooked vegetables is judged by their appearance, flavor, and texture.

a. Appearance. Food must look good on the plate; broken vegetables, uneven shapes and sizes, or vegetables which have lost their natural color, lack eye appeal. When using fresh vegetables, try to ensure that they are cut as evenly as possible. Carrot sticks, for example, which are uniform in length and thickness appeal more to one's eye than do those which vary in length and thickness. Color combinations should be used.

b. Flavor. The natural flavor of vegetables should be retained as much as possible. Serve strong and mild flavored vegetables together; don't serve vegetables of the same flavor in the same meal. Also serve vegetables which will compliment the meats served. A few steps that will help retain the natural flavor of vegetables are:

(1) Cook as quickly as possible.

(2) Use as little water as possible except for vegetables which require a longer cooking period.

(3) Have the water boiling and salted when the vegetable is added.

(4) Bring the water back to the boiling point as quickly as possible after adding the vegetables.

(5) After the water returns to the boil reduce the heat and simmer the vegetable until tender.

(6) If using a steamer, use steam trays or pans which will allow for spreading the vegetable into shallow layers.

(7) Don't use baking soda in the cooking water.

(8) Cook vegetables with skins on when possible.

(9) Bake or steam whenever practical.

(10) Serve vegetables as soon as they are done.

(11) Use the cooking water in soups, sauces, and gravies rather than discard it.

c. Texture. Vegetables that are watery, dry, stringy, or possess other objectionable textures will do little to improve the quality of the meal. Mashed potatoes, for example, should be creamy, light, and free of lumps. Asparagus should be cooked until tender with the buds unbroken to retain the fresh vegetable appearance. Six steps that will aid you in retaining the texture of vegetables are as follows:

(1) Have the vegetables crisp before cooking.

(2) Cook until tender, but still retain a little of the original crispness.

(3) Handle as little as possible.

(4) Hold for a minimum of time after cooking.

(5) When cooking very tender vegetables in steam jacketed kettles, cook a small quantity at a time and use wire baskets to make it easier to drain the liquid from the vegetables.

(6) Do NOT use baking soda.

1-7. SUMMARY

In this chapter you have considered a number of features of vegetables used by the military dining facility. You have studied the classes, market forms, processing, and cooking methods, as well as the value in the menu, serving standards, and the receipt and storage of vegetables.

VEGETABLES, SOUPS, SAUCES, GRAVIES, AND BEVERAGES

Lesson 1

Vegetables

STUDY ASSIGNMENT: Information for MCI Students.
Course Introduction.
MCI 33.19, Vegetables, Soups, Sauces, Gravies, and Beverages, chap 1.

LESSON OBJECTIVE: Upon successful completion of this lesson you will be able to identify the six classes of vegetables and their value in the menu; the market forms available; and their receipt, storage, processing, cooking methods, and serving standards.

WRITTEN ASSIGNMENT:

A. Multiple Choice: Select the ONE answer which BEST completes the statement or answers the question. After the corresponding number on the answer sheet, blacken the appropriate box.

Value: 1 point each

1. Vegetables are grouped into classes based on their

   a. use in the meal.
   b. color.
   c. place of origin on the plant.
   d. nutritional elements.

2. Lettuce, cabbage, and spinach belong to which class of vegetables?

   a. Stems
   b. Flowers
   c. Leaves
   d. Fruit

3. Which vegetables belong to the seed class?

   a. Broccoli and cauliflower
   b. Celery and asparagus
   c. Garlic and onion
   d. Corn, peas, and beans

4. Potatoes belong to which class of vegetables?

   a. Roots
   b. Stems
   c. Leaves
   d. Flowers

5. Cauliflower and broccoli are a vegetable of the _____ class.

   a. leafy
   b. root and root like
   c. flower
   d. stems and shoots

6. In which class of vegetable are celery and asparagus found?

   a. Roots
   b. Flowers
   c. Stems
   d. Fruit

7. To which class of vegetables do tomatoes belong?

   a. Root
   b. Stem
   c. Fruit
   d. Flower

8. In addition to energy, vegetables are an important source of

a. protein.
b. fats.
c. water.
d. vitamins and minerals.

9. Natural vegetable color should be

a. disregarded in preparation.
b. retained as much as possible.
c. controlled with the aid of vegetable food dye.
d. controlled with the addition of soda.

10. Preparing the same vegetable recipe over and over in menu planning results in

a. economy of preparation.
b. a monotonous menu, lacking in variety.
c. menu simplification.
d. proper use of the Armed Forces Recipe Service.

11. The rule for proper vegetable form in planning menus is

a. uniformity.
b. consistency.
c. repetition.
d. variety.

12. In what manner are fresh vegetables shipped?

a. Under refrigeration
b. In dry railcars
c. Frozen
d. In heated railcars

13. Frozen vegetables require a storage temperature of

a. 0° F.
b. 10° F.
c. 15° F.
d. 32° F.

14. What is done to canned vegetables after placing them in the cans but prior to shipping?

a. Thawing
b. Freezing
c. Cooking
d. Homogenizing

15. Upon receipt at the dining facility what processing procedure should be followed for fresh vegetables?

a. Trim spoilage, wash in cold water, and refrigerate
b. Cut up, wash in cold water, store in the storeroom
c. Wash in hot water, repack, and refrigerate
d. Dry, repack, and store in the storeroom

16. Damaged canned vegetables should be disposed of in accordance with the

a. Food Service and Subsistence Management Manual.
b. Marine Corps Menus.
c. Armed Forces Recipe Service.
d. Standard "B" Ration for the Armed Force.

17. Fresh vegetables should be stored in a refrigerator having a temperature range of

a. 36° to 38° F.
b. 38° to 42° F.
c. 42° to 44° F.
d. 44° to 46° F.

18. How many day's supply of fresh vegetables should you order at one time?

a. 3
b. 5
c. 7
d. 10

19. Under what conditions should frozen vegetables be thawed?

a. Room temperature
b. Refrigeration
c. Cold running water
d. Hot running water

20. Nonperishable vegetables should be stored in a cool, dry, well-ventilated area with a temperature range of

a. 35° to 39° F.
b. 40° to 44° F.
c. 45° to 49° F.
d. 50° to 70° F.

21. After having been stored, the three steps in processing fresh vegetables are

a. freezing, washing, and drying.
b. cleaning, paring, and freshening.
c. dehydrating, chopping, and cooking.
d. cleaning, heating, and canning.

22. Fresh vegetables should be washed with

a. cold water.
b. soap and water.
c. hot water.
d. salted water.

23. To achieve freshening and crispness, fresh vegetables should be soaked in _____ water.

a. salted
b. baking soda
c. ice cold
d. warm

24. If vegetables are left to soak for too long a period of time, what values can be lost?

a. Nutrients
b. Color
c. Shape
d. Crispness

25. In preparing frozen corn on the cob, what must be done prior to cooking?

a. Clean
b. Parboil
c. Thaw
d. Steam

26. By what process are most dehydrated vegetables cooked?

a. Add to cold water, boil, and simmer until tender
b. Add to hot water, boil, and simmer until done
c. Add to cold water and boil until done
d. Add to hot water and let sit until done

27. What additional step must be taken before cooking dried beans and peas?

a. Wash briefly
b. Cut up
c. Soak in water for several hours
d. Cook to the boiling point to aid absorption of water

28. Of the nonperishable market forms of vegetables, which type needs little or no processing prior to serving?

a. Dehydrated
b. Canned
c. Dried

29. Boiled vegetables are NOT actually boiled in their preparation, but they are

a. steamed.
b. simmered.
c. scalded.
d. blanched.

30. Simmered vegetables should be cooked in a small amount of water which is saved and used in order to preserve the

a. protein.
b. color.
c. appearance.
d. vitamins.

31. If simmered vegetables must be kept for any length of time before serving, they should be _____ prior to serving.

a. parboiled and simmered
b. cooled and reheated
c. soaked and heated

32. When simmering green vegetables, such as brussel sprouts or green cabbage, how can you preserve the natural color?

a. Cook uncovered
b. Add baking soda
c. Cook covered
d. Add baking powder

33. In order to retain the color, a small quantity of lemon juice, vinegar, or tart apples may be added to what color vegetables?

a. Green
b. Yellow
c. White
d. Red

34. What method cooks vegetables under pressure?

a. Simmering
b. Steaming
c. Grilling
d. Baking

35. Steam cookery of vegetables will help retain the vegetable's

a. weight and color.
b. flavor and texture.
c. nutrients and shape.

36. Baking is considered the most suitable method for cooking vegetables because it preserves the

a. color and appearance.
b. texture and shape.
c. flavor and nutrients.
d. natural freshness.

37. Cooking vegetables by frying on a griddle with little or no fat is known as

a. grilling.
b. ovenfrying.
c. baking.
d. simmering.

38. Which method of cooking is best for large quantities of hash brown potatoes?

a. Deep-fat frying
b. Sauteing
c. Steaming
d. Ovenfrying

39. French fried potatoes are produced by which cooking method?

a. Boiling
b. Grilling
c. Ovenfrying
d. Deep-fat frying

40. Cooked vegetables are judged by what three qualities?

a. Vitamins, minerals, and ash content
b. Simmering, baking, and frying
c. Color, flavor, and form
d. Appearance, flavor, and texture

41. Which serving standard affects vegetables that are broken, uneven in shape, and have lost their natural color?

a. Texture
b. Color
c. Appearance
d. Flavor

42. Cooking vegetables as quickly as possible will aid in retaining their

a. flavor.
b. size.
c. color.
d. storage qualities.

43. When preparing vegetables in boiling water, what ingredient should be added to enhance the flavor?

a. Soda
b. Accent
c. Salt
d. Garlic

44. A means of preserving the texture of vegetables during preparation is to

a. have the vegetables limp before cooking.
b. cook them until tender but still retain some of their original crispness.
c. cook them in steam jacketed kettles in large quantities without using a wire basket.

Total Points: 44

* * *

Chapter 2

SOUPS, SAUCES, GRAVIES, AND THEIR SEASONINGS

2-1. INTRODUCTION

In this chapter you will study a number of similar food products. A soup is essentially a liquid food with any of a great variety of additions. A sauce is basically a thickened soup used to cover foods and to enhance their natural flavors. A gravy is a popular American meat sauce. Since soups, sauces, and gravies are designed to bring out flavors of other foods and to stimulate digestive juices, they are seasoned with salt, spices, and herbs. As you read the material in this chapter, you will see how soups, sauces, and gravies appear to be different, but actually have many similar features.

Section I. SOUPS

2-2. THE IMPORTANCE OF SOUPS

Soups are tasty, nutritious, easy to prepare, and stimulating to the appetite. Hot soups should be served at least once a day during the months of October through May. During the months of June through September soup can be served on an average of at least once every other day. A bowl or cup of soup at the beginning of the meal tends to offset some fatigue and tune the digestive mechanism. Light soups are intended to act as an appetizer by stimulating the appetite. Heavy soups serve as a main food dish furnishing a nourishing hot food in the meal.

2-3. MAJOR CLASSES OF SOUPS

Soups are classified as light, heavy, and specialty. Under each of these classes there are a number of individual types of soups. By varying one or more ingredients each kind of soup can be said to have an almost unlimited number of varieties. For example, in the class of light soups there is one type known as bouillon. Under the bouillon type you may have the chicken noodle variety or the turkey noodle variety, and so on. Or you may replace the noodles with rice to give another variety. This type of substitution leads to an endless number of individual soups.

a. Light soups. There are three types of light soups: bouillon, broth, and consomme. These soups are composed of a clear, thin liquid, usually meat stock, plus miscellaneous cereal and vegetable ingredients. These soups are not thickened with flour, starch, eggs, or milk.

(1) Bouillon. Bouillon soups are generally a combination meat and bone stock, with the addition of a garnish in the form of separately cooked vegetables or paste products such as noodles, spaghetti, or rice.

(2) Broth. A broth is merely the extraction of one particular type of meat and is often served plain or with a garnish of some meat or garnishes similar to those in bouillon.

(3) Consomme. Consomme is a clarified bouillon or stock which is made of vegetables, ground lean beef, chicken, or veal and clarified by the addition of egg whites and a very small amount of edible acid. Consomme may be garnished with diced meat, barley, rice, vegetables, or a combination of these food items. Croutons, grated cheese, or chopped parsley may also be used. The garnish should be added just prior to serving. As a change in your menu, jellied consomme can be served. This is made by adding 2 ounces of gelatin to 1 gallon of consomme and chilling. Serve this item cold and garnish it from the salad line.

b. Heavy soups. There are several types of heavy soups. They are cream soups, purees, chowders, vegetable soups, and gumbos. Basically all heavy soups are started with the use of stock except the cream soup where a large percentage of milk or thin cream sauce is substituted for stock. To fully understand the types of heavy soups each will be covered separately.

(1) Cream soups. These soups are made from thickened stock which contains a roux, a meat or vegetable puree, or eggs thinned with milk. A cream soup may contain milk or a thin cream sauce as a substitute for the stock. An example of this is cream of tomato soup, where tomato sauce is made with a roux, tomatoes, onions, and spices, and scalded milk or a thin cream sauce is combined with this sauce.

(2) Purees. Purees are soups where solid-food items such as vegetables are cooked well done and then are strained through a sieve (pureed) to produce a fine smooth texture. All juices are utilized including stocks. Most pureed soups are bound with a roux (thickener) to make a stable product. Examples of these are potatoes, beans, lima beans, and pureed peas. Approximately 2/3 of the entire cooked vegetables are pureed and the balance is added as garnish. A small amount of roux may be cooked in the soup to prevent settling out of the puree.

(3) Chowders and vegetable soups. Chowders usually contain seafood. Vegetable soups usually contain a mixture of vegetables. All solid ingredients in these soups should be easily identified and not overcooked and are either cooked in stock or in their own broth. The liquid may be left in its natural form, or it may be thickened with a roux which will cause a heavier consistency of the soup. If canned or precooked vegetables are used for this type of soup, the juices, as well as the solid food, should be used. They require very little cooking in order to ensure that they retain a maximum of food values.

(4) Gumbos. Gumbos are very similar to vegetable soups and chowders in appearance. They are often prepared with seafoods, chicken, vegetables, and rice. Even though many combinations are possible, the outstanding characteristic of gumbos is the presence of a vegetable called "okra," which is peculiar in flavor and contains a thick juice which thickens when the item is cooked. Instead of using roux as a thickener, gumbos are often thickened with dissolved cornstarch and simmered for 10 minutes.

c. Specialty soups. Special or foreign soups can be composed of many ingredients. There are variations and specialties relating to locations of various countries. Bisque, bouillabaisse, borsht, and wine soup are some of the specialty soups. These soups will add some variety to your menu. Also, cold soups can be classified under specialty soups. A consomme is usually served cold and jellied, and a well strained potato soup may be served chilled. These are especially refreshing during the hot summer months.

2-4. TYPES OF SOUPS SERVED AND THEIR RELATION TO THE MEALS

When deciding what kind of soup should accompany a certain meal, you must apply several guidelines. These guidelines would consider such things as type of soup (heavy or light), the color, and its conformity to the meal. Correct and incorrect examples are:

CORRECT	INCORRECT
Beef barley soup (P-1)	Cream of tomato soup w/crackers (P-17)
W/croutons (D-16)	Spaghetti w/meat sauce (L-38)
Baked lasagna (L-25)	Creole green beans (Q-7-1)
Cauliflower polonaise (Q-19)	

As you can see in the correct example there is a light soup with a heavy main dish and moderately light vegetable: the soup and the vegetable will accent the flavor of the main dish. In the incorrect example the soup, main dish, and vegetable are primarily tomato or tomato base, and all are heavy. There is no variation in color, everything is red.

To serve such a meal would reflect poor menu planning. A point to remember is a light meal should have a heavy soup and a heavy meal a light soup.

2-5. VEGETABLES USED IN SOUPS AND THEIR PREPARATION

Celery, carrots, potatoes, onions, tomatoes, beans, peas, okra, and green peppers are the fresh vegetables most commonly used in the preparation of soups. When using these vegetables in the preparation of soup, they should be crisp and cut into no smaller than bite-size pieces to retain their identity. Overcooking of these vegetables must be avoided as it will produce an inferior product as prolonged heating will cause vegetables to get mushy and disintegrate. When cutting your vegetables, ensure your knives are sharp. This will reduce your preparation time and make the work much easier. Of the dehydrated vegetables available, potatoes, onions, and peppers are particularly suited for use in preparing the basic stocks as well as for different types of soup. Dehydrated vegetables are presliced or chopped and save preparation time. These vegetables may be added directly to soup stocks, as they do not require reconstitution prior to this usage.

2-6. METHODS OF SOUP PREPARATION, SERVING, AND STORAGE

a. Soup preparation. The Armed Forces Recipe Service contains many recipes which are the key for preparing soups to please a majority of tastes for every kind of meal and all seasons of the year. The proper preparation of a soup is an exacting job which requires careful attention. Soups should not be associated with leftovers from a previous meal. Although there are many leftover ingredients which can be used in soup preparation, they should be used with discretion, and recipes should be followed closely.

(1) Galley-made soups. In the preparation of soup, your main ingredient is the stock or broth which will determine the basic flavor of the soup. The other ingredients which you will add to the stock can be considered as structure building material for the soup. They may be meat, poultry, fish, vegetables, or paste and grain products. In addition to being a filler some of the ingredients (such as diced meats, vegetables, and noodles) can be considered a form of garnish to enhance the flavor and eye appeal of the product. In order to produce a good soup, a good stock is essential.

(a) Types of stocks.

1. Beef. Possibly the most common, versatile, and economical stock is beef stock. This stock is made from beef bones, beef trimmings (if available), water, and vegetables such as onions, carrots, and celery, and seasoning. Beef bones should be fresh and should be crushed or split into 2- to 3-inch pieces. A ratio of four pounds of crushed or split beef bones to 2 1/2 gallons of cold water will produce a very acceptable beef stock. A blend of carcass and shank bones is advisable. If bones are left in large pieces to be cooked (like shank bones), the extraction of soluble material will be retarded. Beef stock should be simmered for about 5 hours.

2. Fish. Fish stock is made with the bones and heads of fish and bits of raw fish meat. Because of the chemical composition and physical structure of the fin fish, stock can be properly made in about 1 hour.

3. Chicken. Stock or broth from chicken can be produced by using either whole, raw chickens or chicken carcasses, wings, or necks. Older chickens produce a richer broth than younger chickens because in young chickens extractives are not sufficiently developed. A 3- to 4-hour simmering period generally will produce a good chicken stock.

4. Vegetables. The stock from vegetables is used for "lean" or "Lenten" soup or puree soups. One or more vegetables are cleaned, trimmed, and washed; then, simmered for 1 to 2 hours depending on the variety of vegetables used. Vegetables should be cut into 1- to 2-inch pieces.

5. Other bones. In the production of stock one is not limited to using only beef, fish, or chicken bones. Veal, lamb, and ham bones can also be used and, like beef bones, should be simmered for about 5 hours.

(b) Use of a bouquet garni. The quality of your stocks can be improved with the addition of a "bouquet garni," a simple bundle of vegetables and spices tied together. It can be removed after 1 hour's simmering or at the end of the cooking process. The quantity or size of the bouquet required will depend on the volume of the stock to be made and the amount of seasoning required. Generally, a "bouquet garni" is composed of two celery stalks, a few parsley stems, one medium carrot, one medium onion, one half bay leaf, one clove, and one dozen peppercorns tied in a cheesecloth bag.

(c) Preserving stock. If stock is not to be used immediately, it should be cooled, strained, and stored in the refrigerator. Stock should be defatted and brought to the boil rapidly prior to using after refrigeration. Under proper refrigeration, stock may be kept safely for a period of 72 hours; however, if no refrigeration is available, the period for safekeeping is reduced to 24 hours. Close examination and care of the stock is required because without refrigeration spoilage is possible.

(2) Commercially prepared soups. Although there are few canned, dehydrated, or instant soups which can be compared to the quality of those prepared according to the Armed Forces Recipe Service, circumstances will arise which may require the use of a commercial soup. Canned and instant soups are adaptable to meals eaten away from the dining facility because they can be transported easily and arrive at their destination in a sanitary condition without refrigeration or special storage containers. They are also useful on occasions where short order service is required or small quantities of soup are needed.

(a) Canned soups. There are two types of canned soups, condensed and ready-to-serve. Condensed soups have 50% of the water removed. It is necessary to replace it by adding an equal amount of water to the condensed soup. Ready-to-serve soups require only heating prior to immediate use. A wide variety of easy to prepare palatable canned soups is available to the military consumer.

(b) Dehydrated and instant soup preparation. These soups are well suited for use in the field dining facility operation because of their storage and keeping qualities. The varieties of both dehydrated and instant soups available are more limited than canned condensed and ready-to-serve soups. In preparing dehydrated or instant soup, boiling water is all that is necessary for their reconstitution.

b. Serving of soup. No matter which type of soup you are serving, it must be as hot as possible before being placed on the serving line or in individual cups or bowls. Hot soups should be kept hot throughout the serving period and tasted occasionally toward the end of long serving periods. Soup kept on the steam line for long periods tends to thicken due to evaporation of liquids, thus condensing its ingredients. In some instances heated stock will have to be added. Cold soups are generally jellied and should be served from refrigerated salad bars.

c. Soup storage. Since it is difficult to keep soup in containers of less than three-inch depth, the storage of leftover soup is to be discouraged, and in any case it must not be used later than 36 hours after preparation. When soup is stored, it should be covered to minimize contamination and to prevent evaporation and placed under refrigeration. Leftover soup may be used in the preparation of other foods, but it is unwise to serve the same soup twice in the same day. Stored soup also loses some of its fresh flavor and quality upon storage. Soup preparation must be planned carefully to minimize leftover quantities so that storage is not required.

Section II. SAUCES AND GRAVIES

2-7. SAUCES AND GRAVIES DEFINED

a. Sauces. Sauces are liquid seasonings served with food to enhance the flavor and height the eye appeal of the food items they are served with. Most sauces are rich in nutritional value.

b. Gravy. The term gravy is a common word used for a sauce served with meat, fish, or poultry that has the flavor of the meat it is served with. The juices or extractions that drip from meat are also called gravy or pan gravy.

2-8. TYPES OF SAUCES AND GRAVIES

Sauces add to the appearance of foods by the addition of color, contrasting ingredients, flavor, and texture. Sauces make it possible to convert a single food (e.g., macaroni or spaghetti) into a number of appetizing dishes. Sauces may be classified according to color, the fat used (as in butter sauce), their consistency, or their use. All sauces can be classified into a few basic types, and from these basic types all other sauces can be derived or built up. In the preparation of sauces the stock is prepared in the same manner as those used in the making of soup. Sauce stocks are more concentrated than soup stock, that is, more bones, meat, vegetables, or a combination of all these are needed to produce a good sauce stock which in turn will produce a flavorful, eye appealing sauce. Figure 2-1 gives a list of the most frequently used sauces, their colors, basic ingredients, and thickening agents as well as an indication of their uses. Do not memorize the chart. Look it over carefully to see the similarities and the differences between the various sauces.

Variety of sauce	Color	Basic ingredients	Thickening agent used	Use
Cream or bechamel	White	Milk, flour, fat	Pale white roux	General purpose meat - fish vegetables
Plain sauce or veloute	White or colored	Stock or milk, flour, fat	Pale white roux	General purpose meat - fish vegetables
Brown sauce (gravy)	Brown	Browned stock and bones, browned flour, fat	Brown roux	Meats and poultry
Plain gravy "au jus"	Brown	Browned stock (starch) opt. meat drippings	(Optional starch) natural	Meats (beef)
Tomato	Red	Tomato stock, fat, flour	White roux	All-purpose fish-vegetables farinaceous (paste) products
Hollandaise and mock-hollandaise	Golden yellow	Melted butter, eggs, lemon juice	Egg yolks	Eggs fish vegetables
Mayonnaise, salad-dressing and french dressing	Golden yellow	Starch, oil, egg yolks	Egg yolks (starch or cooked dressing)	Salads all purpose
Aromatic-butter	Various colors	Butter or margarine, herbs	None	All purpose meat-fish-poultry vegetables
Special or commercial sauces	Various colors	Vegetables, vinegar	Gums or pectin stabilizers	All purpose
Dessert sauces	Any color	Milk and/or fruit juices	Starch or stabilizers	Desserts

Fig 2-1. The basic sauces.

2-9. METHOD USED TO PREPARE SAUCES AND GRAVIES

In the preparation of a sauce or gravy there are three methods of thickening the product. These are the roux, starch, and egg methods.

a. Roux. Of the three methods used in the thickening of sauces or gravies the roux is the most versatile. Before continuing let's define a roux. A roux is a cooked mixture of flour and fat to which a liquid (milk, water, stock) is added to make a sauce. The value of a roux is that it is the most stable, useful, and economical of all thickening agents or binders used in the military dining facility. There are two kinds of roux: light and brown.

(1) Light roux. This roux is used mainly for light or white sauces. To prepare a light roux you must follow a definite ratio of flour and fat, e.g., 1 ounce of flour to 1 ounce of shortening (fat) by weight or 1 ounce of flour (volume) to 1/2 ounce of shortening. If butter or margarine is used, the amount must be increased by 20% to compensate for the water present in these products. Place the required and measured amount of ingredients (fat and flour) in a sauce pan or double boiler and heat slowly while stirring with a spoon or wire whip to obtain a uniformly cooked roux. The cooking time will vary from 10 to 15 minutes. When cooked and still hot, a roux should have an appearance which is similar to moist sand and should have a somewhat nutty aroma. It must, of course, be of light uniform color and not browned.

(2) Brown roux. In the preparation of a brown roux the starch in your flour is undergoing a breakdown when exposed to high or prolonged heat, thus the degree of browning will affect the thickening power of your roux. To thicken a given amount of stock, the amount of flour used for a brown roux must be increased from 10 to 15% over the amount you would use for a light roux to obtain equal consistency. The percentage will depend on the degree of browness. The brown roux is prepared the same way as a light roux, except that it is browned off in the oven in a flat pan. The temperature of the oven should be 325° to 350° F. You should frequently stir the mixture to prevent partial scorching. When done, the brown roux should be golden brown, like a white bread crust.

(3) Keeping qualities. Provided it is properly prepared, stored, and refrigerated a roux can be kept (in glass jars) for several weeks or even months. This is because flour and fat have good keeping qualities under favorable conditions.

(4) Usage. Experience has proven that smooth sauces are best obtained when roux and liquid (either stock or milk) are of different temperatures, that is, the roux must be cool and the liquid hot or vice versa. This method leads to various advantages if sauces or soups have to be thickened for a given number of meals. The required amount of hot liquid is predetermined, heated, and thickened to the proper consistency by careful addition of cool roux. Continuous stirring with a wire whip is necessary whenever a roux is added to liquids to aid in dissolving the roux. Another method is the reverse, whereby a given amount of stock is added to a roux.

b. Starch. Starches as thickening agents are used only in a few cases because they produce transparent, glossy products and are not as heat resistant and as stable as products prepared with roux. Of the starches available, cornstarch, wheat starch, potato starch, and arrowroot are frequently used. These should be mixed with a small amount of cold water before adding to the sauce to prevent the formation of lumps.

c. Eggs. Eggs are often used as binders or thickeners. Whenever they are intended for purposes other than hollandaise sauce, they are used in the following manner: The egg yolks are separated, then they are mixed with an equal amount of cold liquid such as stock or milk (as the product may require). To this a small amount of the hot mixture is added while stirring with a wire whip, to preheat the mixture, but prevent coagulation of the egg. The hot base to be thickened (or bound) is removed from direct heat, and after that the egg thickening agent is added while stirring. No further cooking is required as separation or curdling will take place. If the eggs are added directly to a hot liquid, the result will be scrambled eggs.

2-10. COORDINATION OF SAUCES AND GRAVIES WITH MEALS

When planning a meal, carefully consider the sauce to be used with each food item. The purpose of a sauce is to enhance the natural food flavor, improve its appearance, and add moisture to the dish. Consider the color and consistency of the garnish, the sauce, and the food item so that the sauce will either resemble or contrast with the food item. This paragraph will cover the coordination of sauces and gravies with meat, fish, poultry, vegetables, and desserts which are the major components of meals.

a. Meats. When serving beef, pork, or veal roasts, a gravy will accompany them in most cases. The most popular gravies are natural pan drippings (au jus) and roux-thickened gravies. Although a brown sauce or gravy is usually served with meats, with dark meats a light sauce (such as a cream sauce) will complement the appearance, while with light meats a rich brown sauce will contrast well. A sauce with strong flavored beef dishes is usually not sweet, but a sweet sauce with veal, lamb, or pork is frequently used to increase the bland flavors of these meats. A sweet mint sauce can be served with lamb and a pineapple-raisin sauce with ham.

b. Fish. Sauces which are served with fish should aid in bringing out the natural flavor of the particular fish being served. The sauce should never be so flavored as to mask the fish flavor. A lemon-butter sauce is frequently served with fish such as halibut, tartar sauce is served with fried fish, and a cream or mild tomato sauce will add eye appeal and flavor. Cocktail sauce is a spicy tomato-based sauce served cold with shellfish such as shrimp and oysters.

c. Poultry. Traditionally, roast turkey is served with cranberry sauce and a gravy made from seasoned turkey stock and giblets. Chicken can also be served with giblet gravy. Other sauces used with chicken include an Italian tomato sauce with "chicken cacciatore," a cream sauce with chicken pieces in "chicken a la king," and a strong tomato-spice sauce or chicken that is barbecued.

d. Vegetables. A variety of sauces can accompany vegetables since their natural flavor can be enhanced by the use of strongly flavored sauces. Vegetables such as potatoes are often served "au gratin" with a cheese sauce. Peas, green beans, and mixed vegetables can be served in a heavy cream sauce. A hollandaise sauce is served over broccoli or asparagus. Many vegetables can be cooked using only salt, pepper, and butter or margarine with the butter serving as a sauce. One must keep in mind when serving sauces with vegetables that just enough sauce should be served to enhance the flavor and add to the color and eye appeal of the product. If too much sauce is used, you will produce a mushy mass that is unappetizing.

e. Dessert sauces. This group covers a wide variety of miscellaneous sauces. Dessert sauces can be any color, are usually sweet, and are used as a topping for desserts. They contain a high percentage of sugar, honey, or other sweetener, are thickened with starch, and can be flavored with milk or fruit juices.

Section III. SEASONINGS

2-11. USE AND DEFINITION OF SEASONINGS

Why season foods? You season foods to improve or enhance the flavor of the food product you are preparing, not to disguise it. The art of seasoning food, which is essential in good cookery, cannot be overemphasized. Certain seasonings elevate foods. When using them, however, the cook must be careful not to over season or under season, but rather to obtain a delicious blend which will bring out the full flavor of the predominant ingredients in the dish and enhance the aroma. Spices can be defined as the stem, seeds, roots, buds, blossoms, leaves, or bark of tropical plants that contain aromatic oils. Herbs are similar to spices except that the plants that produce them last for only one growing season. Herbs were originally used as medicine ingredients. Both herbs and spices are used to enhance the flavor and aroma of our foods. When preparing recipes that require the use of herbs and spices, you will find the kind and amount of seasoning indicated on the Armed Forces Recipe Service card being used. If possible, use the spice or herb called for. If it is not available, you can use your experience to substitute another appropriate spice or herb.

2-12. SPICES, HERBS, AND OTHER SEASONINGS

a. Spices. The following is a list of some of the more popular spices and blends along with their uses.

(1) Allspice (whole and ground). This is not a blended spice but comes from the allspice tree. It tastes like a combination of cinnamon, nutmeg, and cloves, thus the name allspice. It is used for spicing meats, seasoning gravies, puddings, pies, cakes, tomato sauces, and dressings.

(2) Anise. This spice has a flavor similar to licorice and is used in sweet food products such as baked products, candies, puddings, and sweet sauces.

(3) Caraway seed. This spice is used on breads and rolls, cottage and soft mild cheeses, cabbage, turnips, and chowders. It is the familiar seed seen on rye bread.

(4) Cardamon. This is a very expensive spice of the ginger family. It is used in baked products and vegetables. Its use is limited by its expense.

(5) Cassia. This spice has a flavor so much like cinnamon that it is difficult to tell the difference. It is much stronger than cinnamon and is used in place of cinnamon.

(6) Cayenne pepper. This is the hottest of all peppers and must be used carefully to avoid making the product too hot to be palatable. It is used with meats, sauces, fish, eggs, gravies, seafoods, and salads.

(7) Celery seed. These seeds do not come from the common edible celery plant but from a wild relative. They are used whole in coleslaw, potato salad, and salad dressing. The ground form is used in soups, stews, tomato dishes, and with fish.

(8) Chili powder. This is a blended spice which is made from cumin, Mexican peppers, oregano, and other spices. It is used in chili con carne and other Mexican dishes, cocktail sauces, stews, hamburgers, egg dishes, and barbecue sauces.

(9) Cinnamon. This strong spice comes from a tropical tree bark. It is used with apples, pastries, and desserts such as puddings, stewed fruits, mincemeat, and mashed sweet potatoes and on cinnamon toast.

(10) Cloves. This is the most pungent spice. It is used with sweet dishes and with meats. Whole cloves are used to garnish ham and pork roasts, while ground cloves are used in baked products, puddings, stews, and applesauce.

(11) Cumin (comino). This spice comes from ground seeds, has a slightly bitter, warm flavor, and is used in curry powder and chili powder as well as to flavor meat dishes, deviled eggs, soups, cheese dishes, and Mexican and oriental dishes.

(12) Curry powder. This spice is blended from at least 12 other spices and is used in salad dressings, chowders, scalloped tomatoes, curry sauce, curries of meat, fish, eggs, and chicken, and in other exotic Eastern dishes.

(13) Dill. Both the leaves and seeds of this plant are used as spices to flavor both meat and vegetable dishes. It's flavor is that of dill pickles.

(14) Fennel seed. This spice has a flavor like anise and is used primarily for poultry seasoning.

(15) Garlic. This onion-like bulb has an extremely strong flavor. It is used to accent the flavors of Italian food and with roasts, soups, stews, and salads.

(16) Ginger. This spice has a warm spicy flavor like gingerbread. It is used for baked products, fish sauces, gravies, oyster stew, fish and meat dressings, sweet sauces, and chocolate desserts.

(17) Horseradish. This white root, shaped like a carrot, has a strong flavor and is used in condiment sauces, dressings, gravies, and cocktail sauces.

(18) Mace. This spice is the light covering of the nutmeg shell and has a flavor like mild nutmeg. It is used for puddings, sauces, custards, baked products, pot pies, applesauce, and doughnuts.

(19) Mustard. Yellow mustard has a mild flavor; brown mustard has a much stronger flavor. The familiar prepared mustard used with hotdogs and hamburgers is a mixture of mustard and other spices mixed with vinegar. Since mustard must have water to release its flavor, dry ground mustard should be soaked for 10 minutes before use in sauces, gravies, and salad dressings. Whole mustard seeds are used in pork products, dressings, boiled beets, and as a garnish for vegetable salads.

(20) Nutmeg. This spice has a sweet, warm spicy flavor and is used in puddings, sauces, custards, baked products, pot pies, applesauce, and doughnuts. It is often used along with cinnamon.

(21) Paprika. This is a blended spice made from red peppers. It is used as a garnish to add color and to brown some dishes.

(22) Pepper. Black pepper is the most common spice, being used at the table from a shaker, like salt. In addition, it is added to many foods during cooking. White pepper is used whenever light foods call for pepper.

(23) Pickling spice. This is a mixture of 10 or more spices. It may be added to many dishes that cook for a time as well as being used to prepare pickles and other pickled foods. It is sometimes added in a spice bag that can be removed after cooking and before serving.

(24) Poppy seed. These small black seeds are used to garnish rolls and can be cooked with vegetables. They have a light but pleasant flavor.

(25) Poultry seasoning. This is a blend of sage, thyme, marjoram, savory, pepper, onion powder, and celery salt. It is used to season bread dressing for turkey, chicken, and duck and for meat loaves. It is strong seasoning that can also be added to other foods where it does not overpower their natural flavor.

(26) Pumpkin pie spice. This is another blended spice that is used in cookies, buns, gingerbread, and sweet potato pies as well as in the traditional pumpkin pie. It contains cinnamon, nutmeg, cloves, and other spices.

(27) Sausage seasoning. This is another blended spice that is used in meat loaves, sausages, and other pork products. It adds a strong flavor to meat dishes when used in moderation.

(28) Sesame seed. This spice has the flavor of toasted almonds and is used in baked products (rolls), salads, sauces, and fish and meat dishes.

(29) Turmeric. This spice gives food a yellow color and a mustard-like flavor. It is used in sauces, vegetables, salads, and meat and egg dishes. It is so strong in color and flavor that it should be used sparingly.

b. Herbs. The following is a list of the more popular herbs with some of their uses.

(1) Basil. This herb blends well with food flavor and is essential for Italian dishes. It is used in tomato sauces, soups, stews, meat pies, lamb dishes, and vegetables.

(2) Bay leaves. This strong herb is used to flavor many meat dishes, sauces, stews, soups, tomato mixtures, chowders, and boiled potatoes. After cooking, it is necessary to remove the bay leaves used. They are often used in a spice bag.

(3) Chervil. This herb has a flavor like parsley and is used in soups and salads.

(4) Chives. This small member of the onion family gives a delicate flavor to many dishes.

(5) Coriander. This herb tastes like a mixture of sage and lemon peel. Its distinctive flavor allows it to season many meat and vegetable dishes.

(6) Marjoram. This herb has a sweet, minty flavor much like oregano. It is used like oregano in poultry dressing, lamb dishes, stews, soups, hash, meat pies, scalloped potatoes, cheese dishes, and sauces.

(7) Mint. The leaves of this plant have a cool, refreshing flavor. They are used to add flavor to some sauces, as a garnish like parsley, and traditionally in iced tea.

(8) Oregano. This is the time-honored seasoning used in Italian foods which contain tomatoes such as spaghetti and pizza. It has a flavor like marjoram and is used in pork dishes, stews, soups, meat sauces, omelets, gravies, vegetables, salads, and salad dressings.

(9) Parsley. This herb is used mostly as a garnish to add color to an otherwise plain dish. Parsley and paprika can be used alone or together to dress up the appearance of many dishes. Chopped parsley has a mild flavor and can be used in many dishes.

(10) Rosemary. This herb has a strong but sweet flavor that goes well with tomato dishes, cheese dishes, fowl, lamb, and pork. In addition it is used in stews, soups, dressings, bastings for roasts and fish, egg dishes, potatoes, salads, and salad dressings.

(11) Saffron. This herb is the most costly seasoning available. It adds a light yellow color and a delicate flavor to such dishes as rice, baked products, candies, stews, vegetables, and sauces. Since it is so expensive, it is seldom used. Turmeric may be used for color, but it does not have the light flavor of saffron.

(12) Sage. This herb has a mint-like flavor which is very strong. It is used for poultry dressings, tomato and cheese dishes, dried beans, baked fish, salad greens, chowders, and many other dishes.

(13) Savory. This member of the mint family has a flavor like thyme. Its principal use is to flavor both brown and green beans.

(14) Tarragon. This herb has a light licorice or anise flavor and is often added to vinegar. It is used with seafood, sauces, salads, chicken, meats, egg dishes, and tomato dishes.

(15) Thyme. This member of the mint family is the best seasoning for seafood. It is also added to meat and vegetable dishes.

c. Other seasonings.

(1) Salt. Salt is the most important single seasoning used in the preparation of almost all types of foods, and it is a standard ingredient to most recipes. It is used to enhance the natural food flavor and to add the distinctive element that gives food a satisfactory taste. Even carbohydrate foods, such as candy, require some salt for a completely satisfactory flavor. Salt should be the first seasoning agent added. Once the salting has been done, other seasonings can be used. Foods that have fine distinctive flavors in themselves require less salt than those with a less refreshing flavor. Seasoning should never be added to the extent that it can be noticed.

(2) Flavored salts. Flavored salts are a blend of ground seasonings and table salt. Celery salt is a blend of salt and ground celery seed; onion salt is a blend of salt and onion powder, a ground product of dehydrated onions; and garlic salt is a blend of salt and garlic powder, a ground product of dehydrated garlic. These flavored salts are used in salads, salad dressings, stews, tomato dishes, sauces, and soups. Garlic and onion salts are used with meat dishes, and celery salt is used with fish dishes.

(3) Monosodium glutamate (MSG). Monosodium glutamate is not a seasoning in the true sense because it adds no distinct flavor of its own. It sensitizes the taste buds so that the natural flavor of food to which it has been added can be tasted to a greater degree. It is obtained through extraction from wheat, corn, or sugar beets, or through fermentation of carbohydrates. Monosodium glutamate can be used with most cooked foods except odoriferous foods such as cabbage. It can also be used with raw vegetables, but should not be used with sweets or fruits.

d. Care of seasonings. The aromatic oils in spices will evaporate when exposed to air for long periods. For this reason small containers or packages are best. Glass jars with tight covers can be used to store spices once the spice container is opened. This way the particular spice will retain its distinctive flavor and aroma for a longer period of time. When using opened spices, give them the "nose" test. If the smell is weak, the spice has lost its flavor and the aromatic oils have evaporated. This spice should be replaced and not used for seasoning your food products.

2-13. SUMMARY

In this chapter you have looked at the major classes and types of soups, their importance and relation to meals, the use of vegetables in preparing soups, and the methods of making soups. You have considered the definition of sauces, and gravies, their types, methods of preparation, and the art of coordinating them with meals. Along with soups, sauces, and gravies you have seen the important part played by spices and herbs and the importance of their care and storage.

VEGETABLES, SOUPS, SAUCES, GRAVIES, AND BEVERAGES

Lesson 2

Soups, Sauces, Gravies, and Their Seasonings

STUDY ASSIGNMENT: MCI 33.19, Vegetables, Soups, Sauces, Gravies, and Beverages, chap 2.

LESSON OBJECTIVE: Upon successful completion of this lesson you will be able to identify the importance, major classes, relation to the meal, preparation, serving, and storage of soups; the definition, types, preparation, and meal coordination of sauces and gravies; and the definition, use, and care of seasonings.

WRITTEN ASSIGNMENT:

A. Multiple Choice: Select the ONE answer which BEST completes the statement or answers the question. After the corresponding number on the answer sheet, blacken the appropriate box.

Value: 1 point each

1. What is the purpose of a light soup when it is served as an appetizer in the meal?

   a. Fill in between other foods
   b. Stimulate the appetite
   c. Provide the liquid required for a meal
   d. Supply a nutritious hot food dish

2. Soup at the beginning of the meal tends to tune the digestive mechanism and offset some

   a. expense.
   b. fatigue.
   c. time.
   d. quality.

3. The three major classes of soup are specialty, light, and

   a. dark.
   b. heavy.
   c. creamy.
   d. smooth.

4. What are light soups thickened with?

   a. Flour
   b. Stock
   c. Milk
   d. Not thickened

5. Which type of light soup is a simple extraction of a single type of meat?

   a. Bouillon
   b. Broth
   c. Puree
   d. Consomme

6. A soup often served cold and jellied is

   a. bouillon.
   b. broth.
   c. consomme.
   d. puree.

7. Cream soups usually consist of a stock and roux mixture thinned with

a. water.
b. vegetable liquid.
c. gelatin.
d. milk.

8. Purees contain vegetables that have been

a. lightly fried.
b. well cooked and strained.
c. finely chopped or diced.
d. added raw in large pieces.

9. Chowders usually have a _____ as their central food item.

a. seafood
b. vegetable
c. meat
d. thin stock

10. The one characteristic of gumbos is the presence of a vegetable called "_____" which aids as a thickening agent when cooked.

a. celery
b. cabbage
c. peppers
d. okra

11. Bisque, bouillabaisse, borsht and wine soups can be classed as _____ soups.

a. different
b. distinctive
c. specialty
d. cold

12. When serving a heavy main dish, a _____ soup should be served.

a. light
b. heavy
c. specialty
d. roux

13. Overcooking vegetables used in soups results in what type of product?

a. Mushy
b. Crisp
c. Recognizable
d. Dehydrated

14. The key to preparing soups is to follow closely the directions found in the

a. Marine Corps Recipe Manual.
b. Basic Soups Preparation Manual.
c. Armed Forces Recipe Service.
d. Navy Cookbook.

15. The basic flavor of galley-made soup is determined by the

a. roux.
b. vegetable.
c. stock.
d. garnish.

16. The most common and economical stock to prepare is

a. fish.
b. poultry.
c. vegetable.
d. beef.

17. Beef stock is made from vegetables, seasonings, water, and

a. beef bones and trimming.
b. cut up beef pieces.
c. rolled roast beef.
d. beef fat.

18. The two quickest stocks to make are

a. beef and veal.
b. chicken and turkey.
c. fish and vegetables.
d. lamb and ham.

19. How should stock that is not used immediately be stored?

a. Tightly covered to retard evaporation
b. Under refrigeration to prevent spoilage
c. Kept hot to keep ingredients mixed
d. In an open container to allow undesirable odors to escape

20. What type of soup is best adapted for use in short order service where small quantities are required?

a. Galley-made soups
b. Commercially prepared soups
c. C-ration soups
d. B-ration soups

21. How are canned condensed soups prepared in the dining facility?

a. Heat and serve the soup immediately.
b. Add the soup to three times the volume of water and heat.
c. Add an equal amount of water to the soup and heat.
d. Heat the can in boiling water, open and serve.

22. Why are dehydrated soups especially suited for use in the field?

a. They have the best quality.
b. They are available in greater variety.
c. They have excellent storage and keeping characteristics.
d. They require long cooking periods.

23. When soup is kept on the steamline for long periods and tends to get thick due to evaporation, it is advisable to thin it with

a. cold water.
b. heated stock.
c. hot water.
d. warm salted water.

24. If leftover soup must be used, it must be served within _____ hours of preparation.

a. 12
b. 24
c. 36
d. 48

25. A bundle of vegetables and spices tied together and added to improve the quality of your stock is called a

a. spice bag.
b. vegetable sack.
c. bouquet garni.
d. stock bundle.

26. The purpose of adding a sauce to a food is to

a. disguise improper cooking.
b. change the flavor of the food item.
c. enhance the flavor and add eye appeal to the food.
d. make it look as though there is more food on the plate.

27. A gravy is a type of sauce which is served with

a. dessert.
b. salads.
c. meats.
d. heavy soups.

28. A brown sauce will normally accompany a _____ dish.

a. seafood
b. meat
c. vegetable
d. salad

29. Sauces with basic ingredients of milk, flour and fat are known as

a. bechamel or cream.
b. au jus (plain).
c. hollandaise.
d. salad dressing.

30. The weight ratio of flour to fat used in the preparation of a light roux is

a. 1 to 1.
b. 1 to 2.
c. 2 to 1.
d. 2 to 2.

31. The two essential ingredients of a roux are

a. stock and flour.
b. fat and flour.
c. butter and herbs.
d. eggs and starch.

32. The cooking time of a light roux should be from _____ minutes.

a. 10 to 15
b. 16 to 20
c. 21 to 30
d. 31 to 35

33. When preparing a brown roux the flour must be increased by what percentage?

a. From 5 to 9 percent
b. From 10 to 15 percent
c. From 16 to 20 percent
d. From 21 to 25 percent

34. To prevent partial scorching of a brown roux, how often should the mixture be stirred?

a. Continuously
b. Frequently
c. Once in a while
d. Only when turning dark brown

35. When prepared correctly, a roux can be placed in a glass jar, refrigerated, and stored for

a. 24 to 48 hours.
b. 72 to 96 hours.
c. 96 hours to 1 week.
d. several weeks.

36. What defect does the use of starch often produce in a sauce?

a. Dark and dull
b. Transparent and glossy
c. White and grainy
d. Watery and tasteless

37. When starch is used as a thickening agent, it should first be mixed with a small amount of water in order to

a. make the product thicker.
b. prevent scorching of the starch.
c. prevent a transparent, glossy product.
d. prevent the formation of lumps.

38. A brown sauce is made from a roux that has been

a. browned in the oven.
b. scorched in the oven.
c. simmered lightly.
d. combined with brown gravy.

39. In order to make a smooth sauce what temperature rule must be observed?

a. Keep the roux and the stock hot.
b. Keep the roux and the stock cold.
c. Add the cold stock to the hot roux or vice versa.
d. Add frozen roux to cold stock.

40. What temperature precaution should be observed when adding eggs to a sauce as a binder?

a. The sauce should be cold.
b. The sauce should be the same temperature as the eggs.
c. The sauce should be removed from heat while adding eggs.
d. The heat should be reduced to simmer before adding eggs.

41. What is the most popular and frequently used sauce served with roast beef?

a. Cream sauce
b. Tomato sauce
c. Gravy
d. Tartar sauce

42. In order to enhance the bland flavor of such meats as veal and lamb what type of sauce is frequently used?

a. Sour
b. Cream
c. Sweet
d. Tartar

43. What type of sauce is served with fried fish?

a. Italian tomato
b. Gravy
c. Cream
d. Tartar

44. What sauce is served cold with shrimp and oysters?

a. Sour
b. Cream
c. Sweet
d. Cocktail

45. What two sauces are traditionally served with turkey?

a. Italian tomato and brown sauce
b. Cranberry sauce and giblet gravy
c. Cream and hollandaise sauce
d. Lemon butter and gizzard sauce

46. A vegetable served with a cheese sauce is known as

a. cacciatore.
b. au gratin.
c. a la king.
d. hollandaise.

47. A rule to remember for vegetable sauces is to

a. keep the sauce mild.
b. keep the quantity of sauce to a minimum.
c. serve vegetables with as much sauce as possible.
d. serve only sweet sauces.

48. The simplest sauce for vegetables is the use of salt, pepper and

a. butter.
b. hollandaise.
c. cream or milk.
d. stock.

49. Dessert sauces contain a high percentage of

a. salt.
b. butter.
c. roux.
d. sugar.

50. The primary thickening agent for dessert sauces is

a. roux.
b. cream.
c. gelatin.
d. starch.

51. Spices and herbs are added to foods to

a. take the place of missing ingredients.
b. enhance the flavor and aroma of foods.
c. hide the burnt taste due to scorching.
d. add color to the product being prepared.
e. disguise the flavor of foods.

52. To determine the kind and amount of spice to use for a particular dish, you should use

a. your own judgment.
b. the Armed Forces Recipe Service card.
c. the "add and taste" method.
d. the nose test.

53. Allspice has a flavor like what other three spices?

a. Celery seed, caraway seed, and curry
b. Parsley, sage, and rosemary
c. Cinnamon, nutmeg, and cloves
d. Thyme, mace, and cumin

54. What seeds are found on rye bread?

a. Caraway
b. Celery
c. Cumin
d. Fennel

55. What is the hottest of all peppers?

a. Black
b. White
c. Cumin
d. Cayenne

56. A blended spice used in Mexican food such as chili con carne is

a. cassia.
b. chili powder.
c. allspice.
d. mustard.

57. What whole spice is used to garnish ham?

a. Nutmeg
b. Chili powder
c. Garlic
d. Cloves

58. What spice which is blended from 12 other spices is used in exotic Eastern dishes?

a. Anise
b. Allspice
c. Curry powder
d. Pickling

59. An onion-like plant with a strong aroma used to flavor Italian foods is

a. horseradish.
b. celery seeds.
c. garlic.
d. ginger.

60. What spice other than nutmeg comes from the nutmeg plant?

a. Cloves
b. Mace
c. Cinnamon
d. Cassia

61. What yellow spice is ground and mixed with vinegar and other spices for use as a condiment?

a. Mustard
b. Turmeric
c. Horseradish
d. Paprika

62. Nutmeg is often used along with what other spice?

a. Cumin
b. Turmeric
c. Mace
d. Cinnamon

63. What is the most common spice?

a. Paprika
b. Cloves
c. Pepper
d. Allspice

64. The small black seeds used to garnish rolls are _____ seeds.

a. poppy
b. dill
c. caraway
d. celery

65. A strong seasoning blended from sage, thyme, marjoram, and other spices used to season fowl is

a. allspice
b. chili powder.
c. pickling spice.
d. poultry seasoning.

66. What seeds have a flavor like toasted almonds?

a. Celery
b. Poppy
c. Dill
d. Sesame

67. Marjoram has a taste similar to what other herb?

a. Basil
b. Thyme
c. Oregano
d. Sage

68. What herb is traditionally used in Italian foods to accent the tomato taste?

a. Parsley
b. Oregano
c. Bay leaves
d. Saffron

69. What two seasonings are used sparingly as a garnish to improve the appearance of a plain dish?

a. Allspice and cinnamon
b. Paprika and parsley
c. Nutmeg and cloves
d. Chili powder and curry powder

70. What herb is considered the best for use with seafood?

a. Basil
b. Savory
c. Oregano
d. Thyme

71. The most important single seasoning used with almost all foods is

a. monosodium glutamate.
b. sage.
c. salt.
d. cloves.

72. The first seasoning agent to be added should be

a. pepper.
b. salt.
c. spices.
d. herbs.

73. A blend of celery, onion, or garlic and salt is a useful seasoning agent known as

a. spices.
b. herbs.
c. monosodium glutamate.
d. flavored salt.

74. Monosodium glutamate is used on food to

a. season it by adding its own flavor
b. improve the flavor of sweets and fruits.
c. sensitize the taste buds to natural food flavors.
d. disguise the flavor.

75. To prevent the aromatic oils of spices from evaporating, opened spices should be stored in

a. glass jars with tight cover.
b. a refrigerated plastic bag.
c. the original container in the storeroom.
d. a warm dry place.

76. What test can you give opened spices to tell whether they have lost their flavor and aromatic oils due to evaporation?

a. Eye
b. Taste
c. Nose
d. Water

Total Points: 76

* * *

Chapter 3

BEVERAGES

3-1. INTRODUCTION

Armed Forces dining facilities serve a variety of beverages. This chapter will discuss coffee and tea, milk and milk-type drinks, fruit drinks, and carbonated beverages, as well as the preparation and storage of beverages and their ingredients and the preparation and serving of beverages in the dining facility. The acceptance or rejection of each beverage is a personal choice. Some will choose coffee or tea for their stimulating effect while others will choose milk and fruit drinks for their nourishment. Coffee, tea, and hot chocolate are frequently chosen to cut the chill on a cold day and fruit juice is a traditional breakfast drink. Beverage use has a number of desirable qualities with meals. They add moisture to what might otherwise be a dry meal; they round out meals to improve their completeness; they contribute the majority of the required daily liquid requirement; and, finally, they have proved to be great morale boosters.

3-2. BASIC TYPES OF BEVERAGES

The beverages served regularly in the dining facility are coffee, tea, milk (milk-base drinks), and fruit drinks. All beverages are served in conjunction with the meal in one way or another (as an appetizer or after dinner beverage).

a. Coffee. Coffee provides one of the best means of establishing a good reputation for the dining facility and is a drawing card for breakfast. Coffee served at this meal demands the highest quality standard possible.

b. Tea. Tea drinking is both an art and a ritual in the daily lives of people in many parts of the world. In the dining facility, tea is a frequently used beverage, served either hot or iced.

c. Milk. Milk is one of the best liked beverages served in the dining facility. It should be served well-chilled unless it is to be served as a hot stimulant during inclement weather.

d. Fruit drinks. Tasty cold fruit juices are a valuable addition to a breakfast meal or as a pleasing appetizer. Citrus juices and tomato juice are particularly important as they provide a source of vitamin C. Fruit drinks, such as lemonade, grapeade, or mixed fruit punch provide stimulation, boost energy, and provide a cooling effect on hot summer days.

e. Carbonated soft drinks. Most dining facilities now have a self-service carbonated soft drink dispenser. Compressed carbon dioxide gas is added to water which is mixed with concentrated drink syrup when dispensed. Crushed ice or ice cubes and glasses should be available near the dispenser.

3-3. STORAGE OF BEVERAGES AND BEVERAGE INGREDIENTS

The storage of beverages and their ingredients is of utmost importance. For example, if the container of ingredients for brewing coffee or tea has been opened and not covered with a tight fitting lid or screw-on cover, moisture in the air will be absorbed and the aromatic oils will dissipate rendering these ingredients less productive, producing unsatisfactory coffee or tea brews when used. To sum it up, improper storage can be costly, causing a loss of man hours, loss of ingredients, and possibly loss of your dining facility's reputation for serving a good hot or cold beverage. In many cases your dining facility reputation is aided by the coffee you serve or by the iced tea which may accompany the lunch or supper meal on a very hot summer day.

a. The storage of coffee and tea. Once a can of coffee is opened or the seal of the loose tea box has been broken, the aromatic oils will begin to evaporate. When used, they will produce an inferior beverage. Coffee and tea (loose or bag) should be kept in tightly covered containers such as a can with a tight fitting lid or glass jar with a screw-on top. By doing this, you will preserve the aromatic oils and retain the freshness of the beverage-making ingredients. On the other hand, if the coffee or tea has just arrived at the dining facilities, you should date the containers and

make sure the new stock is rotated so that the present stock on hand is placed to the front of the storage shelf. This will aid in retaining a fresh stock. It is not advisable to store liquid coffee or tea for any period of time. These beverages should be prepared in such quantities that will provide only enough for the meal being served.

b. The storage of milk and milk ingredients. All milk and ready-made-base drinks should be kept under refrigeration at all times. The only time lapse in refrigeration will be upon delivery. This period of time should normally be so short that the milk product being delivered will be cold enough so no drastic change in its temperature will occur. While in the dining facility, all milk and milk-base products should be kept in the dairy refrigerator prior to use in the dining hall. Once issued for consumption, milk products should be placed in an approved milk dispensing machine located in the dining area. Hot milk drinks should be prepared only in quantities which will be used at the meal being served. Long heating periods tend to curdle milk and in some cases, if not covered, a skim will form giving the milk product an unsavory appearance. Cocoa powder, being one of the most common milk additives, should be handled in the same manner as coffee and tea. When cocoa powder is received at the dining facility, the can should be dated, checked, and placed on the storage shelf to ensure that stock will be rotated. If the entire can of cocoa powder is not used at one time, it should be covered with a tight fitting lid or placed in a jar with a screw-on top, marked, and used at the next preparation of cocoa. By doing this you will ensure the freshness of the cocoa powder and prevent waste of the item if the powder is not used in its entirety.

c. Storage of fruit juice and fruit-base beverages. Canned fruit juices can be stored in the storeroom and placed under refrigeration the night prior to use so that they will be thoroughly chilled for serving at the breakfast meal. Should any opened juices remain after the breakfast meal, they should be placed in sealed glass or stainless steel containers, refrigerated, and used at the next meal as an appetizer on the salad bar. Fruit juices will lose their nutritive value if kept in unsealed containers for any length of time. Frozen juices and fruit drinks should be prepared in quantities which will be consumed during one day's operation. Keep in mind that frozen juice concentrate should be thawed under refrigeration and used shortly thereafter. You should not leave thawed concentrate under refrigeration for any length of time, as the keeping qualities are poor and the nutrient value tends to diminish when not in a frozen state. Beverage base powders used in making fruit flavored drinks should be kept in the storeroom until issued. These powders should be kept in a cool, dry area. When the contents become damp, they will crystallize and become one solid mass rendering the item unacceptable for use.

3-3 BEVERAGE PREPARATION AND SERVING

Beverages provide the necessary liquids to help regulate bodily processes and, when properly prepared and served, add enjoyment to the meal. Coffee and tea are of little nutritional value, but they are stimulants which temporarily remove the feeling of fatigue. Cocoa has nutritional value and is also stimulating, especially when served hot. Fruit drinks, milk drinks, and eggnog are beverages of high nutritive value and, when properly chilled, are very refreshing. The preparation of a good beverage demands as much care as the preparation of the meal itself. Beverage ingredients must be properly stored and, certain established procedures in preparation and serving must be followed. Clean equipment must be used at all times.

a. Coffee. Coffee is generally made by the urn method or by the pot or kettle method. For a limited quantity, the vacuum-type coffee maker is available at some installations. Instant coffee may be used for making coffee in large quantities or by the cup. Recipes for preparing coffee by the various methods are contained in MCO P10110.16_, the Armed Forces Recipe Service.

(1) Brewing principles. There are three basic principles that apply to brewing coffee either in urns or in vacuum coffee makers.

(a) Clean equipment.

(b) Fresh ingredients (coffee and water).

(c) Good techniques of making coffee (correct measurements, correct brewing time, and following the Armed Forces recipe guidelines for preparing coffee).

(2) Brewing methods. Methods used in the brewing of coffee are urn, steam-jacketed kettle, and vacuum unit. We will discuss each of these methods separately.

(a) Urn method. The procedure for urn brewing is to close all the valves and faucets and fill the boiler with freshly drawn water by opening the valve from the cold water supply. When the water supply in the glass gauge on the boiler registers full, close the intake valve and turn on the heat. Do not turn on the heat before the boiler contains water. Fill the outer urn jackets three-fourths full of water, by opening the valves on the lower pipes connecting the boiler to the urns. Then, turn on the heat so that the inner liners will be well-heated when coffee is ready to be brewed. Do not fill urn jackets to maximum capacity; expansion from the heat will cause the water to overflow. Rest the ring with the urn bag attached (seam side in) or filter basket on top of the coffee urn. Be certain that the inner liner is clean and contains no water. Measure the proper amount of fresh ground coffee, and place it into the bag or filter. Spread the coffee evenly in the urn bag or filter basket to a depth of 1 to 2 inches. When the water in the boiler reaches the boiling point (212° F), steam will begin to escape. At this point open the faucet on the boiler and draw the boiling water from the boiler into a gallon measure. Pour the water over the coffee, using a circular motion, be sure to wet all of the coffee evenly. DO NOT overfill the bag or filter basket; by overfilling you will cause coffee grounds to overflow into the brew and produce an inferior batch of brewed coffee. In some types of coffee urns, the boiling water is transferred into the urn bag or filter basket through a siphon leading from the boiler to the top of the urn. Also some urns have an automatic measure while with others the food handler must measure the amounts of water transferred by watching the water level in the gauge glass on the boiler. When the correct amount of water ($7\frac{1}{2}$ gallons of water to 3 pounds of coffee) has been transferred from the boiler to the urn bag or filter basket, remove the urn basket. The water should pass completely through the universal grind coffee in 4 to 6 minutes. Upon removing the urn basket, draw off one-third of the coffee through the coffee faucet into a pitcher and pour it back immediately to blend and ensure uniformity of flavor. Replace the urn cover to prevent the loss of heat and serve. After discarding the used ground coffee, if a cloth filter bag was used, it should be rinsed immediately in hot water to remove old coffee deposits. Store the cloth filter in cold water for further use. Other types of filters include: muslin-leacher bags, permanent-type metal-mesh filters, and paper-type filters. The steps for brewing coffee are as follows:

1. Place paper filter in filter basket; pour in ground coffee, or pour ground coffee into permanent filter of leacher bag.

2. Place paper filter into coffee liner.

3. If so equipped, swing spray head over center of coffee, replace the cover.

4. Pour or spray the boiling water over the ground coffee.

5. After brewing, remove filter basket, blend the brew, replace the cover, and the coffee is ready to serve.

Should your dining facility have an automatic coffee urn, all that is required of you is to measure the correct amount of coffee in accordance to the Armed Forces Recipe Service. Place it into the filter, cover the urn, and use the push button control. The urn will automatically heat the water, spray a measured amount of water on the ground coffee, refill the water compartment as required, maintain the proper temperature for brewed coffee (185° F), and deliver brewed coffee and hot water to the serving faucets.

(b) Kettle method. The steam-jacketed kettle method of coffee brewing can be used in the dining facility if an urn is not available or while under field conditions using a 60-quart cook pot. The Armed Forces Recipe Service Card C, Beverages No. 4, should be followed when preparing coffee by using the kettle method.

(c) Filter drip method. Coffee may be brewed using the filter drip method. All the preparation principles described for the urn method are also applied to brewing coffee in urns using a drip-type filter. The Armed Forces Recipe Service recipe should be followed when using this method of brewing coffee.

(d) Instant coffee method. Instant coffee is procured in flexible packages for the B-ration and for special feeding purposes. The instructions on the package or recipe should be used.

(3) Serving. There are two ways of serving coffee in the dining facility. They are hot coffee or iced coffee.

(a) Hot coffee. Always prepare coffee in time to permit unhurried completion of the brewing process and to allow 5 to 10 minutes settling time before serving. Hot coffee should be held at 185° F and served at this temperature. If you adhere to this holding temperature, your patrons at the dining facility will always be guaranteed a cup of hot coffee. The normal drinking temperature is about 150° F. Never hold coffee for more than 1 hour as the coffee brews will change flavor and color. Keep a check on the coffee heating unit to ensure that the temperature does not fluctuate.

(b) Iced coffee. When correctly brewed and served, iced coffee can be a popular beverage. In the preparation of iced coffee the procedures and precautions for coffee brewing should be observed. In making iced coffee, however, the factor of dilution must be considered. To compensate for the melting of ice in the drink, the original coffee brew must be twice as strong.

(4) Standards of quality. Good coffee smells, tastes, and looks right. If standard techniques and recipes are followed in its preparation, freshly brewed coffee will taste pleasant and have no bitter or acid flavor. It will have a fragrant, mellow, and rich smell, not rancid or oily. The color of the brew should be a rich, deep brown, not black. Clarity of the brew is more related to coffee strength than color. Coffee should be bright, clear, and sparkling. Floating grounds, cloudiness, dullness, and muddiness are defects that will lower coffee quality. If any of these defects are present, check the coffee making equipment or review the correct coffee making procedures.

b. Tea. The two forms of tea used in the dining facilities are bulk and tea bags. In addition, instant powdered tea is also used. There are three serving methods used in the dining facility. They are hot, iced, and instant iced tea. We will discuss each of these separately.

(1) Hot tea brewing. A cup of good hot tea has a fragrant, fruity aroma and flavor. When preparing hot tea using bulk loose tea, the brew should be clear rather than cloudy with no trace of oiliness or leaf silt present. To prepare the brew, pour freshly boiled water over the loose tea leaves. Never boil a tea brew; if you do, the results will be a brew with a bitter flavor. When brewing bulk tea in an urn, pour the boiling water from the tank over the cloth bag containing the tea leaves. During the brewing, dip the bag into the water to force the water through the tea leaves. When making tea in a steam-jacketed kettle, put the bag into the kettle and add the boiling water. If a bag isn't used, put the tea directly into the kettle, but the brew must be strained as soon as the brewing is completed. The timing of the steep period is also important in obtaining a flavorful brew. Do not judge brewed tea strength by color. Color is extracted from some low-grade teas almost immediately, but the type and grade of tea procured for the Armed Forces requires a 3- to 5-minute steeping period to bring out the dark amber or coppery color characteristic of brewed black tea.

(2) Iced tea brewing. In the preparation of iced tea, the original brew must be of a greater strength than that served as hot tea. The reason for this is to compensate for the melting ice which will dilute the beverage too much. Leftover hot tea can be served as iced tea if it is chilled without adding ice. Brewed tea stored in the refrigerator for later use as iced tea will become cloudy. Clouding will occur also if tea brewed for iced beverage is cooled too rapidly. To remedy this condition, a small quantity of lemon juice will aid in clarifying the brew. To dilute strong tea, pour tea into water, NOT water into tea. This will prevent cloudiness.

(3) Instant iced tea brewing. Powdered instant tea is also procured for the dining facilities equipped with iced tea dispensers or for use in bulk preparation. It is easy to use for the preparation of iced tea. The manufacturer's instructions or the Armed Forces Recipe Service should be followed whenever brewing instant tea, hot or iced. Be certain that you add tea to water, not water to tea to prevent lumping.

(4) Serving time of tea. You should schedule the preparation of tea in order that not more than 15 minutes will elapse between its preparation and serving. Tea should be prepared in small batches. If the brew is to be served hot, maintain its temperature between 175° and 185° F throughout the serving period. Leftover tea should never be rewarmed and served for the next meal. Neither should a new brew be mixed with a leftover brew.

c. Milk and milk-base beverages. Of the milk and milk-base beverages served in the dining facility, the hot cocoa beverage is the one drink the cook must prepare which involves the use of milk as the major ingredient; most other milk or milk-base items are procured from a locally contracted dairy. The most important requirement of milk is that it be kept refrigerated unless it is canned (evaporated milk). Once canned milk has been opened, it too should be refrigerated. Let's briefly cover the types of milk most commonly used in the dining facility.

(1) Fresh whole milk. There is no prior preparation necessary for fresh whole milk, except to keep a constant check on its holding temperature to ensure maximum keeping quality and palatability.

(2) Chocolate flavored milk. Chocolate flavored milk produced for dining facility use contains a minimum of 3.25% milk fat. Where practicable, and dictated by customer preference, this product is often offered as a choice along with white milk.

(3) Cocoa beverages. Hot or cold cocoa beverages are popular with younger personnel and are frequently served in place of or in addition to coffee or tea at one of the three daily meals. Since milk is the main ingredient of cocoa beverages it contributes to the nutrition of the meal by supplying quantities of minerals, vitamins, and proteins.

(a) Cocoa beverage preparation. This beverage can be prepared by using natural cocoa and following the Armed Forces recipe for hot cocoa (C-1) or by using cocoa beverage powder. Natural cocoa procured for Armed Forces use contains 22% cocoa butter or fat and 11% starch and must be cooked to break down the starch to make it soluble. As a result, natural cocoa is more often used in baking than for beverages.

(b) Cocoa beverage, cold water dispersible. The cold-water type of beverage powder needs only to be mixed with hot or cold water for preparation. Simply follow the instructions on the package or container.

(c) Cocoa beverage powder, fortified type. Fortified types of cocoa beverage powders are procured for use in the B-ration and for special feeding purposes. This type of cocoa powder must be added to hot water, mixed until a smooth paste is formed, and then blended with cold water. This method prevents the cocoa powder from lumping. For best results follow the instructions on the package.

(d) Quality standard for hot cocoa. Cocoa should have a pleasing appearance and taste. The color should be a light, rich brown, not gray or muddy; the texture should be smooth with no skim, foam, sediment, or wateriness after being served in a cup; the flavor should be delicately sweet, and never scorched.

(4) Fresh skim milk. Fresh skim milk is much lower in fat content than whole milk and should be available for those who desire to watch their weight. No special handling is required other than keeping the milk refrigerated at all times and serving it well chilled.

(5) Fresh buttermilk. Buttermilk is another of the variety milks that needs no prior preparation. Like all fresh milk items it too must be kept refrigerated and served well chilled.

(6) Evaporated milk. Evaporated milk is whole milk which has been concentrated to half its original volume. The removal of water increases the concentration of milk solids. During the concentrating period, the milk is also sterilized, and it is the sterilizing heat which gives evaporated milk its slight caramel flavor. Evaporated milk can be restored to the original whole-milk volume by replacing the water. Mix equal quantities of evaporated milk and water in order to produce whole milk. The Armed Forces Recipe Service specifies that reconstituted evaporated milk may be used in any recipe requiring whole milk.

d. Fruit drinks. Tasty cold fruit juices serve as valuable additions to a breakfast meal or as pleasing appetizers. Citrus juices and tomato juices are particularly important as they provide a good source of vitamin C. Fruit drinks, such as lemonade, grapeade, or mixed fruit punch, stimulate, boost energy, and provide a cooling effect on hot summer days. In preparing fruit juice beverages requiring sugar, such as orangeade, lemonade, or fruit punches, follow the recipe directions given in the Armed Forces Recipe Service. Let us discuss the various fruit-juice beverages separately, beginning with fruit punches, ades, fruit juices and beverage bases.

(1) Punches. Fruit punches are usually prepared by combining two or more fruit juices; the juices can be canned, frozen concentrates, fresh, or a combination. A tea base is sometimes used in fruit punches with slices or sections of fresh fruits added as a flavor additive and garnish.

(2) Ades. Iced fruit drinks of this type served in the dining facility include lemonade, orangeade, grapeade, and limeade. These drinks are usually made from one specific fruit juice, either frozen concentrate, canned, or fresh. If the fruit drink being prepared is made from canned juice, caution is recommended. Chemical changes take place while some of the fruit juices are either being pasteurized or sterilized and a bitter taste is the result. In such cases, a few mint leaves can be added to give the beverage an appreciable boost. The most important factors are the temperature and sugar/acid ratio when serving a chilled drink, especially when canned juices or synthetic flavors are used. It is essential that the drink be served iced. Experts maintain that there exists a definite sugar/acid ratio which is the factor why we like or dislike a particular food or beverage. Therefore, a sour beverage may not seem as acid when the proper ratio of sugar is added and the finished product is well chilled. To aid you in the proper preparation of fruit juice ades, it is recommended that you follow the Armed Forces Recipe Service.

(3) Fruit juices. A wide variety of canned fruit juices in various size containers is procured for the Armed Forces. These juices are used frequently as a breakfast first course. Preparation of these juices is simple, requiring just chilling, opening, and dispensing of the product. Two simple reminders that may help the palatability of these juices are: (a) Shake the containers prior to opening to redistribute the fruit solids which tend to settle to the bottom of the container; and (b) serve soon after opening to ensure that the solid particles stay in suspension. Unused portions of opened canned fruit juices should be transferred to a recommended storage container with tight fitting cover or covered with plastic lids. Juices tend to absorb refrigerator odors and flavors. A "tinny" taste may develop in acid fruit juices if the juice is stored in the can. If available, glass jars with screw-on lids are favorable for storing acid-type juices.

(a) Frozen concentrated fruit juices. These juices are widely used throughout the Armed Forces dining facilities and offer the combined advantages of excellent fresh fruit flavor and a minimum of storage space. They must be stored at 0° F or lower to retain maximum quality. Frozen fruit juices, referred to as concentrated 3 + 1 (3 parts water to 1 part concentrate), are comparable to freshly extracted fruit juices in food value.

(b) Concentrated juice (nonrefrigerated). Presently the only juice available in this form is tomato juice concentrate. This product may be used for tomato juice or in place of tomato paste. Keep in mind when using tomato juice concentrate in place of tomato paste that the concentrate is one-third more expensive. Once again, you should follow the Armed Forces Recipe Service guideline card for reconstitution.

(c) Instant fruit juices. The instant fruit juice products are highly palatable, easy to use, and can be stored in the food storage room requiring very little care. Instant fruit juices are crystal-like powders that readily dissolve in water. The reconstituted juices resemble the fresh and frozen fruit juices in flavor and appearance. Some instant fruit juices used in the dining facility are unsweetened orange juice, lemon juice, and pineapple juice, and unsweetened grapefruit juice. These juices are packed in cans with a desiccant bag that absorbs moisture from the product. This bag must be discarded since the contents are not edible. It is used solely to absorb moisture. Do not reconstitute partial quantities of a can; once opened this product absorbs moisture rapidly. Quality will be lowered if the powdered juice is not reconstituted shortly after the containers are opened. Serve well chilled.

(d) Beverage bases. Beverage base in powdered and liquid form is procured for use in the dining facility. The powdered beverage base contains no natural fruit juices; it is a uniform mixture of imitation or natural flavors. The manufacturer's recommended recipe printed on the package or container should be followed. The fruit flavored beverage bases can be mixed with water or carbonated water. The other flavors of liquid bases should be mixed with carbonated water.

3-5. SUMMARY

In this chapter, you have studied the basic beverages served in the dining facility, the storage of the beverages and their ingredients, the preparation and serving of coffee, tea, milk, and milk-base drinks, and the fruit-type drinks. With the aid of the Armed Forces Recipe Service you, the Marine Cook, should be able to prepare a beverage which will complement the meal you are serving.

3-6. COURSE CONCLUSION

Now that you have completed the lessons for this course, it is time to prepare for the final examination. Your best preparation will be to review the lessons until you can answer all of the questions correctly without reference to the text. When you can do this, you may be sure you will have no trouble with the final examination. If you have the time available to you, a second reading of the chapters of the text will be helpful. Good luck on your final examination and "bon appetit."

VEGETABLES, SOUPS, SAUCES, GRAVIES, AND BEVERAGES

Lesson 3

Beverages

STUDY ASSIGNMENT: MCI 33.19, Vegetables, Soups, Sauces, Gravies, and Beverages, chap 3.

LESSON OBJECTIVE: Upon successful completion of this lesson, you will be able to identify reasons for serving beverages with meals, the four basic types of beverages, the storage of beverages and beverage ingredients, and the steps in the preparation and serving of the various types of beverages.

WRITTEN ASSIGNMENT:

A. Multiple Choice: Select the ONE answer which BEST completes the statement or answers the question. After the corresponding number on the answer sheet, blacken the appropriate box.

Value: 1 point each

1. What effect do coffee and tea have on body functions?

   a. Nourish
   b. Cool
   c. Stimulate
   d. Heat

2. What effect do milk, milk base drinks, and fruit drinks have on the body?

   a. Nourish
   b. Cool
   c. Stimulate
   d. Heat

3. What item in a meal supplies the majority of the daily liquid requirement?

   a. Vegetables
   b. Beverage
   c. Soup
   d. Dessert

4. The reputation of a dining facility will often depend on the preparation of which beverage?

   a. Tea
   b. Coffee
   c. Milk
   d. Cocoa

5. Which beverage provides a good source of vitamin C?

   a. Milk
   b. Coffee
   c. Fruit drinks
   d. Tea

6. What should be done to coffee containers immediately on receipt at a dining facility to ensure fresh stock?

   a. Wash the containers.
   b. Open the container and check the contents.
   c. Date the containers.
   d. Refrigerate the containers.

7. How should coffee or tea be stored once its container is opened?

   a. Under refrigeration
   b. In a tightly covered container
   c. Wrapped in waxed paper
   d. In a hot, dry area

8. What precaution is necessary for milk and milk drinks in the dining facility?

a. Maintain them hot.
b. Refrigerate them.
c. Use fresh ingredients.
d. Store at 0° F.

9. Extended periods of heating will tend to cause milk to

a. become thicker.
b. become rancid.
c. curdle.
d. sweeten.

10. Cocoa powder should be handled upon receipt in the same manner as

a. coffee and tea.
b. milk.
c. frozen fruit drinks.
d. carbonated beverages.

11. Frozen juices should be prepared in quantities that will be consumed in how many days?

a. 1
b. 2
c. 3
d. 4

12. How should frozen orange juice be thawed?

a. Without refrigeration
b. Under refrigeration
c. By placing the container in warm, running water
d. By adding hot water to dilute juice concentrate

13. The storage area for beverage base powders should be

a. cool and dry.
b. hot and dry.
c. humidified with 50 to 60% moisture factor.
d. hot and damp.

14. Where would you find directions for making coffee by the urn, kettle, filter drip, and instant methods?

a. On the instructions plate attached to the urn or kettle
b. Marine Corps Beverage Manual
c. Armed Forces Recipe Service
d. Printed on the coffee container

15. If the coffee urn jackets are filled to capacity, expansion from the heat will cause the water to

a. turn to steam.
b. overflow.
c. drain into the filter bags.
d. give false reading in the glass gages.

16. What is the correct temperature for water to be poured over coffee grounds?

a. 180° F
b. 190° F
c. 200° F
d. 212° F

17. The water which is poured over coffee grounds should pass through the universal grind coffee in _____ minutes.

a. 2 to 4
b. 4 to 6
c. 6 to 8
d. 8 to 10

18. Upon removing the urn basket, why is 1/3 of the coffee drawn off and poured back immediately?

a. To draw out the overflowed grounds
b. To check the color of the brew
c. To ensure uniformity of blend and flavor

19. The proper serving temperature for brewed coffee is

a. 150° F.
b. 165° F.
c. 175° F.
d. 185° F.

20. After brewing coffee in a muslin-leacher bag, how should the bag be stored?

a. In hot water
b. In cold water
c. In a dry container
d. In an airtight container

21. The preparation principles for making coffee are the same for the filter drip method and the _____ method.

a. kettle
b. quick coffee
c. stove top
d. urn

22. The maximum holding time for brewed coffee is

a. 1 hour.
b. 2 hours.
c. 3 hours.
d. 1 day.

23. Coffee made for use in iced coffee should be brewed at what strength compared to hot coffee?

a. Half as strong
b. The same strength
c. Twice as strong
d. Three times as strong

24. What should be the appearance of properly brewed coffee?

a. Slightly cloudy brown color
b. Black with floating traces of coffee grounds
c. Light amber color
d. Deep rich clear brown color

25. When using loose tea leaves to prepare tea, the leaves should be

a. added to boiling water and boiled for 5 minutes.
b. placed into a container, have fresh boiling water poured over them, and left to steep for 5 minutes.
c. placed into a filter, have hot water poured over them as in brewing coffee, and kept hot throughout the serving period.

26. What is the proper procedure for making hot tea?

a. Boil the water and the tea leaves and dilute the mixture.
b. Pour boiling water over the tea leaves.
c. Add the tea leaves to boiling water.
d. Add the tea leaves to the water and boil the mixture.

27. How long should tea be steeped after adding boiled water?

a. Until the color is deep amber
b. 1 minute
c. 3 to 5 minutes
d. Until the tea is consumed

28. When brewed iced tea becomes cloudy, the addition of a small amount of _____ will clear the brew.

a. ice cubes
b. baking soda
c. cold water
d. lemon juice

29. What is the procedure for diluting strong iced tea?

a. Pour the water into the tea.
b. Pour the tea into the water.
c. Pour the tea over ice.
d. Freeze the tea and add it to the water.

30. The maximum time between the brewing and serving of hot tea should be _____ minutes.

a. 15
b. 20
c. 25
d. 30

31. Leftover hot tea can be put to use by

a. rewarming and serving with the next meal.
b. serving as iced tea after chilling by adding ice.
c. serving after adding to a new brew.
d. serving after refrigerating as iced tea at the next meal.

32. Of the milk-based beverages, which is the one drink the cook must prepare?

a. Chocolate flavored milk
b. Cocoa beverages
c. Skim milk
d. Evaporated milk

33. Of the three cocoa powders available, which must be cooked to break down the starch content?

a. Fortified type cocoa beverage powder
b. Natural cocoa beverage powder
c. Cold water dispersible cocoa beverage powder

34. Of the milk products available, which is lowest in fat content?

a. Chocolate flavored milk
b. Fresh skim milk
c. Fresh buttermilk
d. Evaporated milk

35. A punch is a fruit drink prepared from

a. fruit juice and sugar.
b. a mixture of juices.
c. frozen punch concentrate.
d. dry punch beverage base.

36. A tea base can be used in the preparation of which type of fruit drink?

a. Ades
b. Fruit juices
c. Concentrated juice drinks
d. Punches

37. An ade is a fruit drink prepared from

a. a single fruit juice.
b. a mixture of juices from different fruits.
c. fresh fruit only.
d. a tea base.

38. Chemical changes which take place while some fruit juices are pasteurized or sterilized may give the juice a(an)

a. very sweet taste.
b. off color appearance.
c. bitter taste.

39. What ratio is of importance to the acceptance of a fruit ade?

a. Concentrate to water
b. Water to sugar
c. Sugar to acid
d. Acid to water

40. In addition to being used to prepare other beverages, fruit juices are usually served at which meal?

a. Breakfast
b. Lunch
c. Dinner
d. All meals

41. Frozen juice concentrates should be kept at what recommended temperature until reconstituted?

a. 0^{o} F
b. 10^{o} F
c. 32^{o} F
d. 38^{o} F

42. What beverage is available as nonrefrigerated concentrate?

a. Orange juice
b. Grapefruit juice
c. Grape juice
d. Tomato juice

43. What use is made of the desiccant bag found in instant fruit juice cans?

a. The bag contents are added to the juice crystals to enhance the flavor.
b. The bag is discarded along with its absorbed moisture.
c. The bag contents are added to water (if needed) to remove excess alkali.
d. The bag contents are used as a water softener (if needed).

44. When reconstituting instant fruit juices, how much of the can's contents should be reconstituted at one time?

a. One-fourth
b. One-half
c. Three-fourths
d. All

45. A dry powder used to make a fruit-flavored drink which contains no natural fruit juices is known as a(an)

a. beverage base.
b. punch.
c. ade.
d. instant fruit juice.

46. Fruit flavored beverage bases can be mixed with water or what other liquid?

a. Milk
b. Other fruit juices
c. Carbonated water
d. Tea

Total Points: 46

* * *

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MCI - R14 E

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DATE RECEIVED AT MCI: _____

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2. ☐ NOTICE OF COURSE COMPLETION - Final Exam Sent On _____. (New exam will be sent if exam not received at MCI.)
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